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Oceans and the law of the sea

Oceans and the law of the sea

Report of the Secretary-General

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I. Introduction

1. In response to the request of the General Assembly contained in resolution 54/33 of 24 November 1999, the Secretary-General is submitting the present report on oceans and the law of the sea at this time to facilitate the deliberations of the newly established open-ended informal consultative process of the United Nations on ocean affairs.

2. The importance of the oceans and seas to mankind and the interrelatedness of all aspects of oceans and seas have led to significant cooperative and coordinated endeavours on the part of the international community. A comprehensive "constitution for the oceans" dealing with all aspects of man's interaction with the oceans and seas is in place: "the United Nations Convention on the Law of the Sea sets out the legal framework within which all activities in the oceans and seas must be carried out, and with which these activities should be consistent" (resolution 54/33, preamble). An international action plan for sustainable marine and coastal development is operational: "chapter 17 of Agenda 21 remains the fundamental programme of action for achieving sustainable development in respect to oceans and seas".[1] A large number of activities at the global, interregional, regional, subregional and national levels are being fostered and implemented by international organizations and national bodies, promoting, for example, safety of navigation, the sustainable development of marine resources, conservation and sustainable use of marine and coastal biodiversity, protection and preservation of the marine environment, and better scientific understanding of the oceans and seas, their resources and their interactions with the earth's ecosystem.

3. While these actions and accomplishments are commendable, the challenges faced by the international community are also enormous: in some cases, persistent problems continue; in others, new issues are emerging, thus requiring attention. Overexploitation of marine living resources, degradation of the marine environment, inability of many countries to benefit from the rights and to fulfil the obligations under the international legal regime, vulnerability of many island and coastal countries to ocean phenomena and increasing crimes at sea are only a few examples. (See also, in this context, CSD decision 7/1, para. 3.)

4. The General Assembly of the United Nations has been providing stewardship of the world's oceans and seas since its inception. It was the General Assembly that convened the Third United Nations Conference on the Law of the Sea which adopted the 1982 United Nations Convention on the Law of the Sea (hereinafter referred to as "the Convention" or "UNCLOS"). It was also the General Assembly that convened the United Nations Conference on Environment and Development, which adopted Agenda 21. The General Assembly is in a unique position to give effect to the fundamental principle laid down in the Convention that "the problems of ocean space are closely interrelated and need to be considered as a whole." In this context, "convinced of the importance of the annual consideration and review of ocean affairs and the law of the sea by the General Assembly, as the global institution having the competence to undertake such a review" (resolution 54/33, preamble), the General Assembly has been carrying out such annual reviews since 1983, following the adoption of the Convention in 1982, based on annual comprehensive reports prepared by the Secretary-General.

5. Recently, two principles were re-emphasized, at the seventh session of the Commission on Sustainable Development, under the sectoral theme of "Oceans and seas", regarding progress achieved in implementation of chapter 17 and other relevant chapters of Agenda 21: that the General Assembly is the appropriate body to provide the coordination that is needed to ensure that an integrated approach is taken with regard to all aspects of ocean issues, at both intergovernmental and inter-agency levels; and that, to that end, the General Assembly needs to give more time for the consideration and the discussion of the Secretary-General's report on oceans and the law of the sea for the preparation of the debate on the item in the plenary (see CSD decision 7/1, paras. 40(1) and 40(3)). Consequently, in its resolution 54/33, the Assembly decided, "consistent with the legal framework provided by the United Nations Convention on the Law of the Sea and the goals of chapter 17 of Agenda 21, to establish an open-ended informal consultative process in order to facilitate the annual review by the General Assembly, in an effective and constructive manner, of developments in ocean affairs by considering the Secretary-General's report on oceans and the law of the sea and by suggesting particular issues to be considered by it, with an emphasis on identifying areas where coordination and cooperation at the intergovernmental

and inter-agency levels should be enhanced" (para. 2). This decision of the General Assembly reflects, at the turn of the millennium (and in connection with the Millennium Assembly), the importance of the oceans and seas to mankind and the General Assembly's stewardship in this area.

6. It is clear from the resolution and the deliberations in the Commission on Sustainable Development and in the General Assembly that the United Nations informal consultative process on oceans (hereinafter referred to as "UNICPO") is intended to carry out three interrelated tasks: (a) to study developments in ocean affairs consistent with the legal framework provided by UNCLOS and the goals of chapter 17 of Agenda 21; (b) against the backdrop of overall developments of all relevant ocean issues, to identify particular issues to be considered by the General Assembly; and (c) while identifying such issues, to place emphasis on areas where coordination and cooperation at the intergovernmental and inter-agency levels should be enhanced. With respect to particular issues, it might be preferable, with a view to avoiding overloading the General Assembly, to focus on a limited number of concrete issues.

7. The deliberations in the Commission on Sustainable Development and in the General Assembly also make it clear that in its work UNICPO has to apply an integrated approach to ocean issues. Such an approach involves an overview of various sectors related to the oceans and seas, consideration of trans-sectoral issues and, most importantly, an integration of various relevant aspects of oceans and seas, including political, legal, economic, social, environmental, scientific and technical aspects. Once a particular issue is identified by UNICPO for consideration by the General Assembly, such an issue may appear to belong to an individual sector or to involve a single aspect of ocean affairs; but in view of the interrelatedness of ocean issues, UNICPO should be mindful of possible trans-sectoral interfaces and of all aspects of the given issue that may be relevant.

8. The resolution also sets forth a number of parameters in relation to UNICPO. Its meetings should have as broad and inclusive participation as possible: they should be open to all States Members of the United Nations, States members of the specialized agencies, all States parties to the Convention, entities that have received a standing invitation to participate as observers in the work of the General Assembly pursuant to its relevant resolutions, and intergovernmental organizations with competence in ocean affairs; the format of the process should also ensure the opportunity to receive input from representatives of the major groups as identified in Agenda 21. The meetings will be coordinated by two co-chairpersons, Ambassador Tuiloma Neroni Slade (Samoa) and Mr. Alan Simcock (United Kingdom of Great Britain and Northern Ireland), who have been appointed by the President of the General Assembly in consultation with Member States and taking into account the need for representation from both developed and developing countries. The co-chairpersons will elaborate, in consultation with delegates, a format for the discussions that best facilitates the work of UNICPO, in accordance with the rules of procedure and practice of the General Assembly.

9. At the core of the work of UNICPO is the consideration of the report of the Secretary-General on oceans and the law of the sea. Following the deliberations in the General Assembly under the agenda item entitled "Oceans and the law of the sea" (see A/54/PV.62) and in view of the brief time period between those deliberations and the first meeting of UNICPO, the basic documentation for the first meeting consists of: (a) the report of the Secretary-General to the General Assembly at its fifty-fourth session (A/54/429); and (b) the present document. The present document addresses main trends in the recent period and major specific developments in ocean issues during the latter part of 1999 and early 2000. Participants in UNICPO are requested to study the present document in conjunction with A/54/429; in fact, the Secretary-General's annual reports on oceans and the law of the sea for the previous years (A/53/456, A/52/487, A/51/645 and A/50/713) could also be useful. The comprehensive annual reports of the Secretary-General deal with overall developments and issues relating to ocean affairs and the law of the sea, including the implementation of the Convention. These reports, taken together, focus on salient issues in ocean affairs that have arisen in the recent period; measures that are being undertaken to address these issues, including *inter alia*, international policy formulation and implementation, standard-setting, capacity-building, project financing and information dissemination; and matters which may require further action. (See also the Secretary-General's reports to the Commission on Sustainable Development on the sectoral theme of

"Oceans and seas", (E/CN.17/1999/4 and E/CN.17/1996/3 and Add.1), as well as Commission decisions 7/1 and 4/15).[2]

10. In preparing the present report as well as previous annual reports on oceans and the law of the sea, the Secretary-General has applied an integrated approach, providing an overview of all important ocean sectors and issues, addressing trans-sectoral elements and above all synthesizing the relevant aspects of oceans and seas, including the political, legal, economic, social, environmental, scientific and technical. The comprehensive overview of all relevant ocean issues is complemented by in-depth analysis of each specific important issue. This is expected to facilitate the three main tasks of UNICPO outlined above (see para. 6).

11. The General Assembly itself provided valuable guidance regarding one important way of ensuring that the report of the Secretary-General serves the above purposes while at the same time enhancing international coordination and cooperation in oceans and seas. In paragraph 10 of resolution 54/33, the Assembly underlined the importance of the participation of intergovernmental organizations, specialized agencies and funds and programmes of the United Nations engaged in activities relating to ocean affairs and the law of the sea, and the Subcommittee on Oceans and Coastal Areas of the Administrative Committee on Coordination, and of their input to the report of the Secretary-General on oceans and the law of the sea. Accordingly, the Secretary-General, in a letter dated 13 December 1999, requested the participation of the relevant organizations in the meeting of UNICPO and also their input to the present report. The Secretary-General wishes to express his appreciation to the following organizations/bodies for their responses: International Maritime Organization (IMO); Food and Agricultural Organization of the United Nations (FAO); United Nations Industrial Development Organization (UNIDO); World Meteorological Organization (WMO); World Health Organization (WHO); International Civil Aviation Organization (ICAO); World Bank; International Hydrographic Organization (IHO); secretariat of the Convention on Biological Diversity; International Court of Justice (ICJ); United Nations Environment Programme (UNEP), including the UNEP Coordination Office for the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA Coordination Office); United Nations Office for Drug Control and Crime Prevention including United Nations International Drug Control Programme (UNDCP) and United Nations Centre for International Crime Prevention.

12. Finally, following the mandate provided in paragrapl. 7 of resolution 54/33, the Secretary-General, working in cooperation with the heads of relevant organizations of the United Nations, has included, in the present report certain suggestions on initiatives that could be undertaken to improve coordination and cooperation and achieve better integration on ocean affairs.

II. United Nations Convention on the Law of the Sea, the implementing agreements and the newly established institutions

A. United Nations Convention on the Law of the Sea (UNCLOS)

1. Status of UNCLOS

13. The General Assembly, in its resolution 54/31 of 24 November 1999, reiterated the call upon all States that had not done so to become parties to UNCLOS and the Agreement on Part XI of UNCLOS, in order to achieve the goal of universal participation. Since the issuance of the Secretary General's 1999 annual report (A/54/429), there has been no further deposit of instrument of ratification or accession. Consequently, the total number of States parties to the Convention continues to stand at 132 (ibid., para. 10).

2. Declarations and statements under article 310 of UNCLOS

14. Since the issuance of the 1999 report, no additional declarations or statements have been made.

3. Declarations under articles 287 and 298 of UNCLOS

15. Since the issuance of the 1999 annual report, Croatia made a declaration (on 4 November 1999) on the implementation of article 287 of UNCLOS. Croatia declared that, for the settlement of disputes concerning the application or interpretation of the Convention and of the Agreement on Part XI of UNCLOS, it had chosen, in order of preference, the International

Tribunal for the Law of the Sea and the International Court of Justice. Thus, as of 29 February 2000, 24 States had made their choice of procedure as provided for in article 287. This information will be reflected in Law of the Sea Information Circular (LOSIC) No. 11.

B. Agreement relating to the implementation of Part XI of UNCLOS

Status of the Agreement

16. There are no changes in the status of the 1994 Agreement relating to the implementation of Part XI of UNCLOS as reflected in the 1999 report (A/54/429, paras. 22-23).

C. Agreement for the implementation of the provisions of UNCLOS relating to the conservation and management of straddling fish stocks and highly migratory fish stocks

Status of the Agreement

17. Since the issuance of the 1999 report (ibid., paras. 25-26), Australia and Brazil have ratified the 1995 Agreement on Fish Stocks, bringing the total number of ratifications and accessions to 26.

D. Institutions created under UNCLOS

1. International Seabed Authority

18. The International Seabed Authority is the organization through which States parties to UNCLOS shall, in accordance with the regime established in Part XI of UNCLOS and the Agreement on Part XI of UNCLOS for the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction (the Area), organize and control activities in the Area, in particular with a view to administering the resources of the Area. The Authority commenced functioning in Kingston, Jamaica, on 16 November 1994, and since then, has held five sessions.

19. Details about the work of the Authority can be found in the recent annual reports of the Secretary-General (A/54/429, paras. 29-37; A/53/456, paras. 29-38; A/52/487, paras. 25-33; A/51/645, paras. 56-64; and A/50/713, paras. 48-54). Among the most significant achievements of the Authority are the approval, in 1997, of the plans of work of seven registered pioneer investors for exploration for polymetallic nodules and the progress made in formulating the regulations on prospecting and exploration for polymetallic nodules in the Area (the "seabed mining code").

20. The sixth session of the Authority will be held at Kingston from 20 to 31 March 2000. With respect to the organization of work for the session, the 36-member executive organ of the Authority, the Council, decided that priority would be given to the work of the Council on the draft seabed mining code, with a view to adopting the code in 2000.

2. International Tribunal for the Law of the Sea

21. The International Tribunal for the Law of the Sea was established by the Convention, with jurisdiction over any dispute concerning the interpretation or application of UNCLOS. The 21 members (judges) of the Tribunal were elected in August 1996; they held their first session in October 1996 at the seat of the Tribunal in Hamburg, Germany, and since then have held nine sessions.

22. Details about the work of the Tribunal can be found in the recent annual reports of the Secretary-General (A/54/429, paras. 38-50; A/53/456, paras. 39-54; A/52/487, paras. 34-41; A/51/645, paras. 65-76; and A/50/713, paras. 55-58). Among the most significant achievements of the Tribunal is the consideration of five cases — *M/Vs Saiga* (No. 1) case, *M/V Saiga* (No. 2) case, Southern Bluefin Tuna Cases (Nos. 3 and 4) and *Camouco* case.

23. The Tribunal held its ninth session in March 2000 and deliberated on its draft budget for 2001, which will be submitted for approval to the Tenth Meeting of States Parties to the Convention (New York, 22-26 May 2000). It also prepared its annual report to the Meeting of States Parties. It further discussed its draft financial regulations and other documents to be presented to the Meeting of States Parties.

24. The Tribunal on 17 January 2000 received an application from the Government of Panama against the Government of France for the prompt release of a vessel. The dispute concerned the arrest in September 1999 of the fishing vessel *Camouco* by a French frigate allegedly for unlawful fishing in the exclusive economic zone of Crozet (French Southern and

Antarctic Territories). The vessel had been flying the Panamanian flag and had been detained together with its master by French authorities on the island of Reunion. The Tribunal deliberated on the case and delivered its judgment on 7 February 2000 (see paras. 250-257 below). (The full text of the judgment, the summary of the proceedings as well as press releases ITLOS/Press 33, 34 and 35, can be found on the web site on "Oceans and the law of the sea" (www.un.org/Depts/los), maintained by the United Nations Division for Ocean Affairs and the Law of the Sea.

3. Commission on the Limits of the Continental Shelf

25. The functions of the Commission on the Limits of the Continental Shelf, established by the Convention, are to consider the data and other material submitted by coastal States concerning the outer limits of their continental shelves in areas where those limits extend beyond 200 nautical miles; to make recommendations to coastal States in accordance with UNCLOS; and to provide scientific and technical advice in this respect if requested by coastal States. The 21 members of the Commission were elected in 1997 for a term of five years; since then the Commission has held six sessions.

26. Details about the work of the Commission can be found in the recent annual reports of the Secretary-General (A/54/429, paras. 51-61; A/53/456, paras. 55-69; A/52/487, paras. 43-53; and A/51/645, paras. 77-84). Among the most significant achievements of the Commission are the adoption of the Scientific and Technical Guidelines (CLCS/11), which are intended to provide assistance to coastal States regarding the technical nature and scope of the data and information which those States must submit to the Commission to enable it to make recommendations on the outer limits of the continental shelf beyond 200 nautical miles, and of annexes to the Guidelines (CLCS/11/Add.1) which, *inter alia*, include flowcharts providing a simplified outline of the procedures described in the relevant parts of the Guidelines themselves (see A/54/429, paras. 53-54).

27. The Commission will hold its seventh session in New York from 1 to 5 May 2000. The Commission decided to convene an open meeting on 1 May 2000 during the session. A note verbale was sent to all permanent missions of States Members of the United Nations, conveying the text of General Assembly resolution 54/31, emphasizing paragraph 15, in which the Assembly welcomed "the decision of the Commission to convene an open meeting during its seventh session, aimed at familiarizing States with the necessity to implement the provisions of article 76 and annex II to the Convention", and encouraging States to attend the meeting. The resolution reflected the requirement of UNCLOS that coastal States submit particulars of such limits to the Commission "within ten years of the entry into force of [the] Convention for that State" (UNCLOS, annex II, article 4).

28. The open meeting is also intended to explain to policymakers and legal advisers the benefits the coastal States may derive from implementing the provisions of article 76 of UNCLOS regarding the limits of the continental shelf. There are more than 30 States which appear to meet the legal and geographic requirements to take advantage of those provisions. The Commission also felt that the meeting would be especially useful for explaining to national experts in marine sciences who are involved in the preparation of submissions how the Commission considers that the Scientific and Technical Guidelines should be applied in practice.

29. In respect of the issues of training necessary to develop the knowledge and skills for preparation of the submissions in respect of the outer limits of the continental shelf as required by article 76, the Commission has undertaken a number of steps with the ultimate aim of providing assistance to States in this regard. As the Commission felt that certain activities carried out under the programmes of the Intergovernmental Oceanographic Commission (IOC) and the International Hydrographic Organization (IHO) may be relevant to the scientific provisions of article 76, and therefore useful in addressing the training needs of developing States in that respect, those organizations were invited to appraise the Commission of pertinent developments. Several other issues related to training have been included in the Commission's agenda for the seventh session, including a report of the working group of the Commission on training; a review of existing training projects and capacities within the United Nations system; and the compilation of a manual to assist coastal States in the process of preparing a submission.

E. Meetings of States Parties

30. The Convention provides, in article 319, paragraph 2 (e), that the Secretary-General "shall convene necessary meetings of States Parties in accordance with this Convention". The first Meeting, was convened in New York on 21 and 22 November 1994 immediately following the entry into force of the Convention. As of 1999, there have been nine Meetings of the States Parties to the Convention. The Meetings have dealt primarily with elections of the members of the International Tribunal for the Law of the Sea and of the members of the Commission on the Limits of the Continental Shelf as well as with budgetary and administrative matters of the Tribunal. (For details, see A/54/429, paras. 62-67; A/53/456, paras. 70-78; A/52/487, paras. 54-55; A/51/645, paras. 24-25; and A/50/713, paras. 14-21.) The tenth Meeting of States Parties will be held in New York from 22 to 26 May 2000. Among the items on the agenda are the report of the Tribunal; the draft budget of the Tribunal for 2001; the draft Financial Regulations of the Tribunal; and the Rules of Procedures of the Meeting of States Parties, in particular, the rules dealing with decisions on questions of substance (rule 53).

F. Dispute settlement mechanisms

Conciliation

31. Since the issuance of the 1999 report (A/54/429) the following conciliators have been added to the list: Mr. Carsten Smith, Ms. Karin Bruzelius, Mr. Hans Wilhelm Longva and Ambassador Per Tresselt, nominated by Norway. (For the names of other conciliators in the list, see ibid., para. 69.)

Arbitration

32. Since the issuance of the 1999 report, the following names have been added to the list of arbitrators drawn up and maintained by the Secretary-General of the United Nations in accordance with UNCLOS, annex VII, article 2: Mr. Carsten Smith, Ms. Karin Bruzelius, Mr. Hans Wilhelm Longva and Ambassador Per Tresselt, nominated by Norway. (For the names of other arbitrators in the list, see ibid., para. 70.)

Special arbitration

33. The specialized agencies FAO, UNEP, IOC and IMO, which are required to draw up and maintain a list of experts in their respective area of competence, have continued to update their lists, copies of which are sent to the Secretary-General of the United Nations. The updated lists received by the Secretary-General will be published in Law of the Sea Information Circular (LOSIC) No. 11.

III. Maritime space

A. Practice of States

34. At the National Ocean Conference in 1998 in Monterey, California, held in commemoration of the International Year of the Ocean, the President of the United States of America directed his Cabinet to report to him with a recommendation for a comprehensive ocean policy to guide United States federal efforts in the twenty-first century. In a report it submitted to the United States Vice-President in September 1999, entitled "Turning to the sea: America's ocean future", the Cabinet recommended nearly 150 actions in 25 key areas to protect, restore and explore the ocean resources of the United States. To oversee implementation of the Cabinet recommendations, the Vice-President announced the formation of a high-level Oceans Report Task Force. The Task Force is expected to prioritize the recommendations, appoint lead agencies for implementation of key recommendations, and meet quarterly to review progress. It is to be co-chaired by the Chairman of the Council on Environmental Quality and the Deputy National Security Adviser and will include high-level representatives of federal agencies with responsibility for ocean affairs.

B. Summary of national claims to maritime zones

35. Compliance of States with the provisions of UNCLOS regarding the establishment of the outer limits of maritime zones is very high (see A/54/429, paras. 85-87, in particular, the table presenting summary statistics about national claims to maritime zones). Details about maritime claims are presented in *Law of the Sea Bulletin* 39.

IV. States with special geographical characteristics

A. Small island States

36. One of the most significant recent developments with respect to small island developing States was the convening of the twenty-second special session of the General Assembly in New York on 27 and 28 September 1999 to review and appraise the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States (the Barbados Programme of Action). The Commission on Sustainable Development, acting as preparatory body for the special session, met earlier at United Nations Headquarters, on 23 and 30 April and from 9 to 10 September 1999. In the declaration annexed to the resolution adopted at its twenty-second special session (resolution S-22/2), the General Assembly recognized, *inter alia*, that communities of small island developing States are the custodians of large areas of the world's oceans and have a high share of global biodiversity, that they are at the forefront in the fight against climate change, and that their exposure and predicament underline the urgent need to take action to implement the Barbados Programme of Action. The Assembly also endorsed the recommendations of the Commission on Sustainable Development contained in the document entitled "State of progress and initiatives for the future implementation of the Programme of Action for the Sustainable Development of Small Island Developing States", in annex II to the resolution. (For a detailed discussion of the Assembly resolution and the recommendations of the Commission, see A/54/429, paras. 94-100.)

37. Furthermore on 22 December 1999, the General Assembly, on the recommendation of the Second Committee of the Assembly, adopted resolution 54/225, entitled "Promoting an integrated management approach to the Caribbean Sea area in the context of sustainable development"[3].

38. The Alliance of Small Island States (AOSIS) is one of the most important international organizations addressing the issues of such States, especially small island developing States. The first AOSIS Workshop on the Clean Development Mechanism (CDM) of the Kyoto Protocol (Majuro, Marshall Islands, 14-16 July 1999) adopted the Majuro Statement on Climate Change (A/S-22/5). The statement, *inter alia*, stressed that the developing countries, in particular the least developed and small island developing States among them, because of their vulnerability to the adverse effects of climate change and exposure to natural disasters, require special capacity-building initiatives; expressed resolve to work together to coordinate donor activities and domestic priorities to more effectively address capacity-building and adaptation needs of SIDS, and recognized Norway's Small Island Developing States workshop, Australia's South Pacific workshop and the South Pacific Regional Environment Programme (SPREP) Climate Change conference and round table in the Cook Islands as key opportunities for addressing them; and called for further work to be done on the issue of adaptation technology, especially for coastal zone management and protection.

B. Landlocked and geographically disadvantaged States

39. The provisions of Part X of UNCLOS are among the most important sources of international law governing the access of landlocked States to and from the sea and the freedom of transit. Part X frequently serves as a point of reference during negotiations by landlocked and transit States of specific agreements on terms and modalities for such transit. Recent developments in respect of landlocked and geographically disadvantaged States (LLGDS) are discussed in the annual reports of the Secretary-General (A/54/429, paras. 101-108; A/53/456, paras. 115-117; A/52/487, paras. 86-89; and A/51/645, paras. 41-42.)

40. On 22 December 1999, the General Assembly adopted resolution 54/199, entitled "Specific actions related to the specific needs and problems of landlocked developing countries", in which it welcomed the note by the Secretary-General transmitting the progress report of the secretariat of the United Nations Conference on Trade and Development (UNCTAD) on specific actions related to the particular needs and problems of landlocked developing countries (A/54/529), as well as the agreed conclusions and recommendations for future action adopted by the fourth Meeting of Governmental Experts from Landlocked and Transit Developing Countries and Representatives of Donor Countries and Financial and Development Institutions (New York, 24-26 August

1999) (see also A/54/429, paras. 104-105). The Assembly also reaffirmed the right of access of landlocked countries, including landlocked developing countries, to and from the sea and freedom of transit through the territory of transit States by all means of transport, in accordance with international law, and requested the Secretary-General to convene in 2001 another meeting of governmental experts from landlocked and transit developing countries and representatives of donor countries and financial and development institutions, including relevant regional and subregional economic organizations and commissions, to review progress in the development of transit transport systems, including sectoral aspects and transit transportation costs, with a view to exploring the possibility of formulating necessary action-oriented measures.

V. Shipping industry and navigation

A. Shipping industry

1. The industry situation

41. International shipping registered its twelfth year of consecutive growth in 1997, with seaborne trade reaching a record high of 4.95 billion tons. At the end of 1997, the world merchant fleet had reached 775.9 million deadweight tons. The combined tonnage of oil tankers and dry bulk carriers continued to dominate the world fleet, representing 71.3 per cent of total tonnage in 1997. According to *Lloyds Register* world fleet statistics for 1998, the 10 fastest-growing fleets were those of the Cayman Islands, Cambodia, Belize, Antigua and Barbuda, Kuwait, Madeira (Portugal), the United Kingdom, Germany, the Canary Islands (Spain) and Qatar.

42. The major owners of world tonnage are, with the exception of Greece, the major trading nations. More than half of the world's merchant fleet deadweight tonnage is not registered in the countries of domicile of the parent enterprises, i.e., the countries where the controlling interest of the fleet is located. In 1997, the seven major open-registry countries were Panama, Liberia, Cyprus, Bahamas, Malta, Bermuda and Vanuatu. In each of those countries, except for Cyprus, the share of tonnage owned by their nationals and registered in their country was minimal or zero.

43. A considerable number of vessels, in particular large bulk carriers and tankers originating from the building boom of the early to mid-1970s, are already 25 years old or approaching that age. It is expected that the considerable costs related to the enforcement of stricter requirements as well as the recent decrease in freight rates will result in many ships being sent for demolition over the next few years. (For details about the shipping industry, the growth, ownership and registration of the world merchant fleet and the ageing of the world fleet, see A/54/429, paras. 109-113.)

2. Decommissioning/recycling/scrapping of ships

44. The projected increase in the number of ships for decommissioning, recycling and scrapping and the safety and environmental implications have focused public attention on an industry which has traditionally been self-regulating. The Conference of Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, at their fifth meeting in December 1999, adopted a draft decision prepared by the open-ended Ad Hoc Committee (A/54/429, para. 117) as decision V/28, entitled "Dismantling of ships". IMO informed the Conference of discussions which had taken place in IMO on the subject.[4]

45. The Marine Environment Protection Committee (MEPC) of IMO, at its 44th session, in March 2000, considered a number of documents containing proposals on how IMO should deal with the issue of recycling of ships (see also A/54/429, paras. 116 and 120). With the exception of Brazil, which proposed that it should be dealt with by the parties to the Basel Convention (IMO document MEPC 44/16/3), all other proposals supported the inclusion of the issue on the work programme of MEPC. In this connection it should be noted that the Netherlands and Norway proposed the development by IMO, in cooperation with the Basel Convention and the International Labour Organization (ILO), of international practical guidelines for ship recycling (MEPC 44/16/1 and MEPC 44/16/2). Norway regarded such guidelines as an intermediate step in the development of a binding international regime. MEPC was also informed of the establishment by the shipping industry of an industry-related working group and its preparation of a policy on ship recycling and an associated code of practice.[5]

46. Friends of the Earth International drew attention to the environmental threat posed by the possible

failure to manage effectively the release of harmful organisms during the decommissioning and scrapping of ships and recommended the development of measures and/or regulations to address the issue (MEPC 44/16).

47. MEPC decided to consider the matter further at its 46th session in 2001. In order to facilitate the discussions at that session, the Committee set up a Correspondence Group to, *inter alia*, gather information on current practices concerning the recycling of ships; identify the safety and environmental risks associated with the current practices; collate information to be received from the secretariats of ILO, the Basel Convention and the London Convention and from industry on their activities and perceived responsibilities associated with the recycling of ships.

B. Navigation

1. Overview of the activities of IMO and IHO

Overview of IMO's activities and main objectives[6]

48. The International Maritime Organization has identified the following main trends within its area of competence: (a) in recent years the Organization has continued focusing its activities on the adoption and implementation of international rules and standards for the safety of navigation and the prevention of the pollution of the marine environment; (b) it has also intensified its treaty-making activity aimed at ensuring that prompt and adequate compensation is paid to victims of maritime accidents; (c) the adoption of new treaties as well as amendments to existing ones have been guided by the philosophy that rules and standards should be developed to prevent accidents at sea, and not in response to them (accordingly, operational features are constantly under review to ensure that shipping activities conform to the most stringent safety and anti-pollution preventative regulations).

49. IMO attaches the highest priority to the need to ensure that the numerous rules and standards contained in its body of treaties are properly implemented. To ensure this, it focuses on the continuous strengthening of regulations to enable flag States, port States and shipowners as well as all other industrial partners in the responsibility chain to develop their capacities and exert their responsibilities to the fullest. Technical cooperation has been intensified by the operation of the Integrated Technical Cooperation Programme (ITCP), aimed at ensuring that funds from different donor sources are properly channelled towards the execution of projects under the supervision of IMO as executing agency for strengthening the maritime infrastructure of developing countries.

50. On the basis of the recent trends in maritime affairs, the IMO Assembly at its twenty-first session (15-26 November 1999) adopted resolution A.900(21), which identifies the main objectives of the Organization for the 2000s as follows: to take measures to implement the proactive policy agreed in the 1990s more vigorously than in the past, so that trends which might adversely affect the safety of ships and those on board and/or the environment may be identified at the earliest feasible stage and action taken to avoid or mitigate such effects (in implementing this directive, formal safety assessments should be used to the extent possible in any rule-making process); to shift emphasis onto people; to ensure the effective and uniform implementation of existing IMO standards and regulations; to ensure also the wide early acceptance of those annexes to MARPOL 73/78 (International Convention for the Prevention of Marine Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto) that have not yet entered into force; to develop a culture of safety and an environmental conscience; to avoid excessive regulations; to strengthening the Organization's technical cooperation programmes; to promote the intensification of Governments and industry efforts to prevent and suppress unlawful acts which threaten the security of ships, the safety of those on board and the environment (in particular, terrorism at sea, piracy and armed robbery against ships, illicit drug trafficking, illegal migration by sea and stowaway cases); and to continue observing resolution A.500(XII), entitled "Objectives of the Organization in the 1980s" and resolution A.777(18), entitled "Work methods and organization of work".

51. Resolution A.900(21) also highlights the efforts of the IMO Secretary-General to promote the objectives of the Organization, in particular, those enhancing the safety of roll-on roll-off (ro-ro) passenger ships and bulk carriers; the expeditious revision of the International Convention on Standards of Training Certification and Watchkeeping for

Seafarers (STCW Convention); and the worldwide implementation of the standards and regulations adopted by IMO, to ensure the wide and effective implementation of the revised STCW Convention, the International Safety Management (ISM) Code, MARPOL 73/78 and the Convention on Facilitation of International Maritime Traffic. The resolution also notes the special contribution of the World Maritime University, the IMO International Maritime Law Institute and the IMO International Maritime Academy in achieving IMO objectives.

Overview of IHO's activities and main objectives[7]

52. The International Hydrographic Organization drew attention to the following activities that should be carried out in the interest of the safety of navigation and the protection of the marine environment: conducting, following IHO standards, hydrographic surveys (which include bathymetry and measurements of oceanographic parameters) in ports, harbours and sensitive coastal areas as a first priority, and in the territorial sea, the exclusive economic zone and the continental shelf as a second priority; publishing and distributing the information derived through the hydrographic surveys in the form of nautical charts (electronic and paper) and nautical books for the safety of navigation of all ships; making available the hydrographic and oceanographic survey information related to the sea areas under the coastal State's jurisdiction in the form of bathymetric maps and Geographic Information System (GIS) products, for the purposes of, for example, fishing, coastal zone management and scientific studies. Other activities include establishing/modifying aids to navigation on the basis of the hydrographic survey results and the particular use of the sea areas concerned (the International Association of Lighthouses and Aids to Navigation Authorities (IALA), with which IHO cooperates, deals with this matter); disseminating maritime safety information in accordance with the Global Maritime Distress and Safety System (GMDSS) (this aspect is dealt with by IHO in cooperation with IMO); and organizing adequate training courses for hydrographic surveyors, nautical cartographers and aids to navigation operators following the standards established by IHO and IALA.

53. IHO points out that while in the developed countries there are well-established hydrographic services carrying out the above activities, many other countries also need to be assisted in this area. IHO has prepared a chart which broadly depicts the geographical regions where coordination and cooperation should be enhanced in the interest of the navigation safety and the protection of the marine environment; these include the West Pacific Islands, South Asia, the Persian Gulf, the Red Sea, southern Africa, Western and Central Africa, the southern Mediterranean, the Black Sea, the Baltic Sea and Central America and the Caribbean. There are thus vast areas worldwide requiring robust intervention, most particularly, in the African region. It should be noted in this connection, that the General Assembly in paragraph 21 of its resolution 53/32, of 24 November 1998, invited States to cooperate in carrying out hydrographic surveys and nautical services for the purpose of ensuring safe navigation as well as to ensure the greatest uniformity in charts and nautical publications and to coordinate their activities so that hydrographic and nautical information is made available on a worldwide scale.

2. Safety of ships

(a) Ship construction, equipment and seaworthiness

54. As reported by IMO, the International Safety Management (ISM) Code, which imposes rules upon shipping companies to ensure the sound management of safety and pollution prevention standards, became mandatory under the International Convention for the Safety of Life at Sea (SOLAS 1974) for all tankers, bulk carriers, gas carriers, passenger ships and cargo high-speed craft of 500 gt and above in 1998. The remaining categories of ships will have to comply with the provisions of the Code by July 2002. The IMO Assembly attached the highest priority to the implementation of the second compliance phase, as reflected in its resolution A.880(21), adopted at its twenty-first session (November 1999).

55. The Global Maritime Distress and Safety System had been fully implemented by February 1999. A great deal of effort by Governments, with the assistance of IMO, has resulted in the development of search and rescue plans in accordance with the 1979 Search and Rescue (SAR) Convention. These plans now cover the world's oceans in such a way that, wherever an accident may occur at sea, the response mechanism

would be uniform, and in conformity with GMDSS provisions. Thus a true combined GMDSS/SAR system is now in place to reduce lives lost at sea. Coordination of efforts in this field is being further pursued with the publication of a comprehensive International Aeronautical and Maritime Search and Rescue Manual jointly by ICAO and IMO.

56. Resolution A.887(21), entitled "Establishment, updating and retrieval of the information contained in the registration databases of the Global Maritime Distress and Safety System", adopted by the IMO Assembly at its twenty-first session, includes recommended procedures for ensuring that information on ships using GMDSS equipment is up-to-date and easily and continuously available, for example to maritime rescue coordination centres (MRCCs). Every State requiring or allowing the use of GMDSS systems should make suitable arrangements for ensuring that registrations of identities are made, maintained and enforced.

57. The safety of dry cargo bulk carriers has become an IMO priority in recent years and in July 1999 a new chapter of SOLAS introduced improved standards and regulations. Further recommendations relating to the design and construction of bulk carriers are now being considered by IMO.

58. The IMO Assembly, also at its twenty-first session, adopted resolution A.886(21), entitled "Procedure for adoption of, and amendments to, performance standards and technical specifications". The resolution states that the Maritime Safety Committee (MSC) and the Marine Environment Protection Committee of IMO should be responsible for adopting performance standards and technical specifications, as well as amendments to them. The resolution is intended to establish a uniform procedure for the adoption of, and amendments to, any performance standards and technical specifications developed by MSC and MEPC to ensure that such standards and specifications keep abreast of technological and industry developments.

59. At the same session, the IMO Assembly adopted resolution A.883(21), entitled "Global and uniform implementation of the harmonized system of survey and certification (HSSC)". The resolution is aimed at encouraging all States to implement the harmonized system of survey and certification (HSSC), even if they are not parties to the relevant Protocols, which entered into force on 3 February 2000. The HSSC covers survey and certification requirements of SOLAS, the 1966 International Convention on Load Lines (LL), MARPOL 73/78, as well as the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code) and the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) (see also A/54/429, para. 133).

60. Furthermore, at the twenty-first session the IMO Assembly adopted resolution A.889(21), entitled "Pilot transfer arrangements", under the recommendations of which, ship designers, equipment designers and manufacturers are encouraged to consider all aspects of pilot transfer arrangements at an early stage in design. The aim is to ensure the safety of pilots, especially in embarking/disembarking a ship.

(b) Manning of ships and training of crews

61. IMO reports that, as of 1998, parties to the STCW Convention were required to submit to IMO information on their compliance with the 1995 amendments concerning the competence of their training institutions. A report evaluating the information communicated by Parties is to be submitted by the Secretary-General of IMO to the Maritime Safety Committee in May 2000.

62. The IMO Assembly at its twenty-first session, in November 1999, adopted resolution A.890(21), entitled "Principles of safe manning" (see A/54/429, para. 136.) The resolution replaces resolution A.481(XII) adopted in 1981 and is intended to take into account developments in the shipping industry since then. It includes basic principles to be applied when considering manning levels in order to ensure the safe operation of the ship.

63. Addressing concerns about a proliferation of fraudulent certificates of competency, or authentic certificates reportedly issued on the basis of forged foreign certificates, which have been found during port State control inspections and applications for recognition of certificates, the IMO Assembly at its twenty-first session adopted resolution A.892(21), entitled "Unlawful practices associated with certificates of competency and endorsements" (see also A/54/429, para. 142).

(c) Labour conditions

64. The joint IMO/ILO Ad Hoc Expert Working Group on Liability and Compensation regarding Claims for Death, Personal Injury and Abandonment of Seafarers, which met for the first time in October 1999 (see A/54/429, para. 143), generally agreed that the problem of abandoned crew members was a serious one requiring urgent remedial action (see also paras. 201-203 below).

65. ILO[8] and the International Confederation of Free Trade Unions (ICFTU) drew attention to 212 cases of abandonment involving over 3,500 crew members, which had been notified to the International Transport Workers' Federation (ITF) between July 1995 and June 1999. The cases listed were said to constitute only "the tip of the iceberg".[9] The seafarers represented at the meeting pointed out that claims of seafarers did not have the highest priority among maritime liens and that none of the existing instruments made direct remedies available to crew members/seafarers apart from the possibility of bringing a civil action. It was considered unrealistic to expect stranded crew members/seafarers to be able to afford the expenses of legal action in a foreign country.

66. The Working Group considered that UNCLOS established a general duty of a flag State to exercise effective control over vessels flying its flag, including social and labour aspects. It was also recognized that issues arising from problems of abandonment included: repatriation; support for crew members while stranded; immigration status; and questions of the payment of outstanding remuneration. In reviewing the adequacy and effectiveness of relevant instruments,[10] the Group considered that none adequately addressed the problem comprehensively. The Group concluded that the obligation of repatriation of crew members/seafarers lay with the shipowners. However, where the shipowner failed in his obligation to repatriate, the flag State had the primary obligation to do so under applicable international instruments.[11] It was suggested that flag States should ensure that a mechanism was in place prior to registering ships.

67. The Working Group agreed that further information was needed with regard to the following: the reasons for the low rate of ratification of relevant existing instruments and problems encountered; existing national schemes and systems dealing with problems of abandonment of crew members/seafarers; and lessons learned from various civil liability regimes and their impact on certification schemes. On the basis of the information collected, the Group would examine and evaluate the following possible new approaches for dealing with the problem: national funds; an international fund; compulsory insurance; systems based on bank guarantees or similar mechanisms; and other proposals.[12]

68. During the meeting reference was also made to the valuable recommendations on the repatriation of seafarers which emanated from the round table organized by the Seamen's Church Institute of the Center for Seafarers' Rights (see A/53/456, para. 180).[13]

3. Transport of cargo

69. As reported by IMO, one highlight during the biennium 1998-1999 was the adoption of amendments to SOLAS which would make the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-level Radioactive Wastes on Board Ships (INF Code) mandatory as from 1 January 2001.

70. The World Wide Fund for Nature (WWF) in its submission to MEPC at its 44th session highlighted the relevance for IMO of chapter 19 of Agenda 21, since the carriage by sea of hazardous and noxious substances was covered in a number of IMO instruments, such as MARPOL annexes II and III, the IBC Code, the BCH Code, SOLAS chapter VII, the International Maritime Dangerous Goods (IMDG) Code and the Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances (see also para. 177 below). WWF also pointed out that since illegal traffic in toxic and dangerous products involved maritime transport and since international cooperation was vital to solve the problem, it would be appropriate for the MSC of IMO to consider that activity (MEPC 44/13/1). MEPC agreed to take chapter 19 of Agenda 21 into account when it considered issues of chapter 17 under its agenda item "Follow-up to UNCED" (see draft report of MEPC on its 44th session, MEPC 44/WP.6/Add.2, paras. 13.9-13.10).

4. Safety of navigation

71. The General Assembly of the United Nations, in its resolution on oceans and the law of the sea

(resolution 54/31), reaffirmed the importance of enhancing the safety of navigation as well as the necessity for cooperation in that regard.

72. IMO reported that its Assembly at its 21st session had adopted resolution A.893(21), entitled "Guidelines on voyage planning" (see also A/52/487, para. 156). The Guidelines note that the development of a plan for voyage or passage as well as the close and continuous monitoring of the vessel's progress and position during the execution of such a plan are of essential importance for the safety of life at sea, the safety and efficiency of navigation and the protection of the marine environment.

73. The Subcommittee on Safety of Navigation of IMO, at its 45th session in September 1999, concluded its revision of SOLAS chapter V and will submit the draft text (NAV 45/14/Add.1) to MSC at its 72nd session in May 2000 for its consideration and approval. The Subcommittee was not able to resolve all outstanding issues and referred the unresolved issues to MSC (see A/54/429, para. 132).[14]

74. MSC at its 71st session in 1999 decided that, rather than continuing work on the development of an international code of safety for ships in polar waters, it would instead use the draft code developed by the Subcommittee on Ship Design and Equipment (DE 41/WP.7) as a basis for developing recommendatory guidelines for ships operating in ice-covered waters. In developing such guidelines any provisions in the current draft code, which were inconsistent with international law, including a requirement in the draft code to give prior notification to the coastal State when entering its exclusive economic zone, should be removed. Antarctic waters were to be excluded from the application of the guidelines, unless the Antarctic Treaty members decided otherwise.[15] The XXIIIrd Antarctic Treaty Consultative Meeting (24 May-4 June 1999) decided that it would develop its own guidelines for Antarctic shipping and related activities and seek their subsequent adoption by IMO. A meeting of experts is to be convened to develop draft guidelines (see decision 2 (1999), entitled "Guidelines for Antarctic shipping and related activities" (MSC/72/13/2)).

(a) Routeing measures and ship reporting systems

75. The IMO Assembly at its 21st session confirmed the MSC decision concerning amendments to the General Provisions on Ships' Routeing (see A/54/429, para. 160).[16]

76. The Subcommittee on the Safety of Navigation, *inter alia*, approved for adoption by MSC at its 72nd session (May 2000) a mandatory ship reporting system in the waters off Chengshan Jiao Promontory and a ship routeing system as a recommendatory measure. The Subcommittee also approved with modifications the proposal by the United States for new recommended tracks off the coast of California (see A/54/429, para. 162).[17] The Subcommittee also discussed Spain's submission to the 71st session of MSC in 1999 informing the Committee of its intention in the future to unilaterally adopt mandatory ship reporting systems within its territorial sea in approaches to ports, areas of high traffic density, hazardous areas for navigation or environmentally sensitive areas, etc., in order to optimize safety of navigation and prevent maritime accidents. Such measures, Spain noted, would be in conformity with UNCLOS article 21(1) (MSC 71/20/12). During the session of MSC, the United States and the Russian Federation had noted that SOLAS regulation V/8-1 was very clear in requiring that any mandatory system must first be submitted to IMO for review and adoption.[18] The Subcommittee noted the intention of Spain to adopt the mandatory ship reporting systems in its territorial sea in accordance with SOLAS regulation V/8-1. In order to accommodate the concerns of other delegations and ensure the right of enforcement, Spain informed the Subcommittee of its intention to submit those systems to MSC.[19]

77. In the aftermath of the oil spill caused by the sinking of the *Erika* off the western coast of France in December 1999, the Prime Minister of France on 15 February 2000 announced a series of initiatives designed to strengthen the safety of maritime transport. In this connection, a letter dated 18 February 2000 from the ministers of Foreign Affairs and Transport of France along with an attached memorandum on the strengthening of safety in international shipping was communicated to the Secretary-General of IMO for circulation to all ILO member States (IMO Circular Letter No. 2208). The letter states that "the French authorities want measures to be taken as quickly as possible that will enable pollution incidents such as the one now affecting France to be prevented in the future. They will naturally be pursuing the action already initiated on these matters within the European Union

(EU). IMO remains the natural forum for discussions and decisions that will create the right conditions for safer and more responsible maritime transport." In the memorandum France reiterates its determination to take, together with its partners in EU, measures consistent with the international law of the sea and with the powers of IMO. France intends to propose to EU the strengthening of the surveillance of polluting or dangerous ships of more than 300 GRT entering the territorial waters of the EU States on their way to an EU port. This measure would include mandatory reporting upon a ship's departure from a non-EU port and 24 hours before its arrival in a EU port, as well as prior mandatory annual filing of a complete safety report. It would be possible to deny access to the territorial waters of EU States on grounds of safety in the light of deficiencies in fulfilling either of these elements.

78. This system would be established in compliance with the international law of the sea, particularly as it affects pleasure craft and ships protected by immunity. In accordance with the spirit of UNCLOS, France will propose to its EU partners that a system be established for reporting, at their entry into the territorial waters of the EU States, ships transporting oil, dangerous bulk cargo or certain particularly dangerous substances and passing through the territorial waters of EU States without stopping at an EU port. The system would be duly notified to IMO. It would be implemented in the straits of EU in accordance with UNCLOS articles 41 and 42 and in full coordination with IMO. France also intends to set up in coordination with EU members a voluntary reporting scheme for ships over 300 GRT transporting oil or dangerous goods at their entry to member States' exclusive economic zones. This scheme also would be set up in compliance with the relevant provisions of UNCLOS and would comply with existing navigation rules in the exclusive economic zone.

79. The Secretary-General of IMO, in his opening statement to the 44th session of MEPC, noted that since the *Erika* accident, meetings had been held by the European Commission to deal with the problem and, according to media reports, proposals for action had been formulated. The ministers for Foreign Affairs and of Transport of France had also suggested a general framework for action in their 18 February letter addressed to him (see para. 77 above). While acknowledging that this was an understandable reaction from any community which was sensitive to any instance of loss of life at sea or pollution of the marine environment, the Secretary-General reiterated his firm position that IMO should always and without exception be regarded as the only forum for the consideration and adoption of safety and pollution prevention standards affecting international shipping. He emphasized that any regional, not to mention unilateral, application to foreign flag ships of national requirements which exceeded IMO standards would be detrimental to international shipping and to the functioning of IMO itself, and should therefore be avoided. A large number of delegations supported the Secretary-General in stressing that any proposal for the improvement of safety at sea or environmental protection at the regulatory level resulting from an investigation into the casualty must be discussed and agreed internationally within the framework of IMO, rather than regionally or unilaterally.[20]

(b) Maritime communications

80. In addition to the information provided above (paras. 55-56) concerning GMDSS, IMO reported that its Assembly at its 21st session had adopted resolution A.888(21), entitled "Criteria for the provision of mobile-satellite communication systems for the Global Maritime Distress and Safety System". The resolution recommends that Governments provide the mobile-satellite communication system elements necessary for the proper operation of the GMDSS. The resolution also notes that the Inmarsat system is currently the only mobile-satellite communication system recognized by SOLAS contracting Governments for use in the GMDSS, but that IMO needs to have in place criteria against which to evaluate the capabilities and performance of other mobile-satellite communication systems which may be proposed for the GMDSS in the future.

(c) Provision of services/sharing of costs

81. The International Conference on Navigational Safety and the Control of Pollution in the Straits of Malacca and Singapore: Funding and Managing International Partnerships was convened in Singapore in October 1999 (see A/54/429, paras. 170-172). The discussions focused on three issues: (a) enhancement of navigational safety in the Straits; (b) frameworks for cooperation in preventing and managing marine pollution in the Straits; and (c) cooperative

arrangements under UNCLOS article 43. It was generally recognized that article 43 implies a measure of obligation on user States to enter into a dialogue with States bordering a strait, but that the strait States must take the initiative and decide among themselves on the nature and extent of assistance they seek and the modalities they wish to establish for such cooperation. Some form of funding mechanism to implement article 43 with respect to the Straits of Malacca and Singapore was considered inevitable. Some participants expressed their preference for a voluntary scheme, while others proposed the establishment of a trust fund through an international conference. It was recognized that one crucial issue would be to devise a system for managing the funding mechanism that would meet the interests of both the Straits States and the user States.[21]

C. Enforcement

1. Flag State implementation

82. At the international shipping conference, Mare Forum, held at Amsterdam in June 1999, maritime regulators and the shipping industry discussed how to provide the right balance of market forces and administrative measures so that quality shipping could be rewarded at the expense of the substandard. One of the ideas put forward and supported by many participants at the conference, which might not only foster higher quality standards in shipping but would make quality shipping more profitable, was the possible development of a network of quality registers (NQR). The guiding principles of the NQR would be to support the work of IMO on improving the performance of flag States and to consider ways in which the cost advantage enjoyed by substandard shipping might be eliminated or at least significantly reduced. The conference decided to establish a Working Group which held its first meeting in September 1999 and had a first informal discussion about how the NQR concept might be developed in a practical way.[22]

83. In addition to the information it provided on the ISM Code as described above (para. 54), IMO reported on the adoption by its Assembly at its 21st session of resolution A.880(21), entitled "Implementation of the International Safety Management (ISM) Code by 1 July 2002". The resolution urges member Governments, SOLAS contracting Governments and the shipping industry to take urgent appropriate action to ensure that ships and shipping companies liable to ISM certification on 1 July 2002 comply with the requirements of the Code by that date. The resolution notes that SOLAS does not provide for any extension of implementation dates for the introduction of the ISM Code.

84. IMO explained that the ISM Code establishes safety management objectives, which are: to provide for safe practices in ship operation and a safe working environment; to establish safeguards against all identified risks; and to continuously improve safety management skills of personnel, including preparing for emergencies. The Code requires a safety management system (SMS) to be established by "the Company", which is defined as the shipowner or any person, such as the manager or bareboat charterer, who has assumed responsibility for operating the ship (the SMS is described in A/53/456, para. 221). The Code also outlines the responsibility and authority of the master of the ship. It states that the SMS should make it clear that "the master has the overriding authority and the responsibility to make decisions". The Code then deals with other seagoing personnel and emphasizes the importance of training.

85. IMO reported on the adoption by its Assembly at its 21st session of resolution A.881(21), entitled "Self-assessment of flag State performance", and its Flag State Performance Self-Assessment Form (see A/54/429, paras. 187-188). The resolution states that flag States have the primary responsibility to have in place an adequate and effective system to exercise control over ships entitled to fly their flag and to ensure that they comply with relevant international rules and regulations. It urges member Governments to carry out a self-assessment of their capabilities and performance in giving full and complete effect to the various instruments to which they are party.

86. At the 8th session of the Subcommittee on Flag State Implementation, in January 2000, the Secretary-General of IMO informed the Subcommittee that to date only seven completed and one partly completed self-assessment forms had been returned. He urged member States which had not done so to complete their forms and submit them. The Subcommittee agreed on a list of criteria (see A/54/429, para. 189) and a series of performance indicators by which flag State performance could be measured when complying with the recommendations contained in IMO Assembly resolutions A.847(20), "Guidelines to assist flag States

in the implementation of IMO instruments", and A.881(21), "Self-assessment of flag State performance". The Subcommittee agreed on a draft MSC/MEPC circular, to include the criteria and performance indicators, for submission to MSC and MEPC for approval (see report of the 8th session of the Subcommittee, FSI 8/19, annex 2). MSC will consider the circular and any proposal relating thereto at its 72nd session, in May 2000.

87. As regards developments in IMO relating to the follow-up of the invitation to IMO in paragraph 35 (a) of CSD decision 7/1 (see A/54/429, para. 183) and the request in General Assembly resolution A/54/32, it can be noted that the Subcommittee on Flag State Implementation discussed the role of IMO in addressing the lack of effective flag State implementation as a prime cause for illegal, unregulated and unreported (IUU) fishing. Various views were expressed on this issue in the Subcommittee, including the following: that IUU fishing was a serious problem and further cooperation between FAO and IMO should be supported (see also paras. 120-125 below); that although the 1993 Torremolinos Protocol had not entered into force, there were a number of regulations in force which were applicable to fishing vessels, e.g., SOLAS chapter V, MARPOL annexes I and V, the Collision Regulations, etc., and aspects of those regulations referring to fishing vessels should be discussed by the Subcommittee; and that it was not within the mandate of IMO to take responsibility for ensuring that fishing vessels give complete and full effect to the provisions of UNCLOS. The Subcommittee also noted that IMO was not the competent body on nationality of ships referred to in article 91 of UNCLOS and therefore should not engage in discussing the matter. After extensive discussions, the Subcommittee decided to recommend to MSC and MEPC the establishment of a joint IMO/FAO ad hoc working group. MEPC at its 44th session (March 2000) also agreed in principle, subject to further consideration by MSC, to establish the proposed joint IMO/FAO working group (see para. 124 below).

88. Australia, Canada, France, Poland, Portugal, Singapore, the United Kingdom and the European Commission in a submission to the 72nd session of MSC (MSC 72/7/2) invited MSC to instruct the Subcommittee on Flag State Implementation: (a) to consider the development of measures in binding form, where IMO members considered it appropriate, to ensure that ships of all flags States meet their international rules and standards so as to give full and complete effect to UNCLOS and, in so doing, to the IMO conventions to which they are party; and (b) to determine the form such an instrument should take and how it would relate to applicable international law and IMO instruments.

89. On the issue of genuine link, the United States, in its submission to the Subcommittee under the agenda item "Implications arising when a vessel loses the right to fly the flag of a State", provided information on its national practice in that regard (FSI 8/6/2). It stated that there were limitations placed on vessels flying the flag of the United States to ensure that the United States maintained a genuine link with the vessel. The United States bestowed nationality only upon ships wholly owned by its citizens and manned primarily by its nationals. A documented vessel under the laws of the United States may not be placed under the registry of another country or operated under the authority of another country without the approval of the United States.

90. On the issue of transfer of flags, the Subcommittee agreed that there were a number of legal issues involved in the matter and that the development of guidelines to assist administrations with flagging/deflagging procedures would be useful. In that regard the United Kingdom stressed that the issue was of particular importance with respect to piracy and stolen ships being registered again and that it would submit a relevant paper to the 72nd session of MSC. The Subcommittee invited members to submit comments and proposals to its next session and invited the United Kingdom to provide a first draft of pertinent guidelines (FSI 8/19, paras. 6.2-6.5).

2. Port State control

91. IMO reported that a distinctive feature of its activities to ensure the uniform implementation of its safety and anti-pollution standards had been the organization on a regional basis of agreements on the exercise of port State control. Since the first agreement of the kind, the Paris Memorandum of Understanding (the Paris MOU), it has been the Organization's goal to extend the concept to cover the whole globe. In addition to the Paris MOU, there are now agreements in place covering four other regions, namely, Latin America, Asia and the Pacific, the Caribbean and the

Mediterranean (see also A/54/429, paras. 190-207). Furthermore, two agreements have been signed, one for the Indian Ocean and the other for West and Central Africa. Preliminary draft MOUs have been agreed to for the Black Sea States and for the Persian Gulf.

D. Marine casualties and incidents

92. In addition to the information it provided on the GMDSS as described above (paras. 55-56), IMO reported on the adoption by its Assembly at its 21st session in November 1999 of resolution A.894(21), entitled "International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual", setting out the procedure for updating the Manual, which was jointly developed by IMO and ICAO and published by them in 1998. The resolution gives MSC the responsibility for adopting amendments to the IAMSAR Manual after receiving and evaluating, through its subsidiary bodies, proposals for amendments and/or additions. The Manual is designed to help States meet their obligations under the International Convention on Civil Aviation, SOLAS and the SAR Convention.

93. The IMO Assembly also adopted resolution A.884(21), entitled "Amendments to the Code for the investigation of marine casualties and incidents (resolution A.849(20))", adding "Guidelines on investigation of human factors" to resolution A.849(20), which requests flag States to conduct an investigation into all very serious/serious marine casualties and to supply IMO with all relevant findings (see A/52/487, paras. 138-141 and A/53/456, para. 217). Flag States are also instructed to use the Code as a basis for providing a standard approach to the investigations, in order to correctly identify the causes of casualties and incidents.

VI. Crimes at sea

94. Peace and security in the oceans encompasses not only traditional political and military security, but also environmental security and security of resources. It also has to do with maintenance of security against crimes at sea, which has recently placed a heightened demand on the enforcement capacity of States and poses a challenge which most States, especially developing and small island States, have not been able to meet.

95. IMO reported that its Assembly at its 21st session had adopted resolution A.900(21), which identifies the main objectives of the Organization for the 2000s, one of which is to promote the intensification of efforts by Governments and industry to prevent and suppress unlawful acts which threaten the security of ships, the safety of those on board and the environment (in particular, terrorism at sea, piracy and armed robbery against ships, illicit drug trafficking, illegal migration by sea and stowaway cases) (see also para. 50 above).

A. Piracy and armed robbery

96. IMO provided information on main trends within its area of competence and reported that during recent years it has intensified its activities to assist States in the suppression of illicit acts committed at sea. IMO Assembly resolution A.738(18) on measures to prevent and suppress piracy and armed robbery against ships empowers MSC to keep the issue under continuous review; the Committee has included it in its long-term work plan. As a result, the IMO secretariat circulates monthly reports on piracy and robbery against ships and has explored ways to maintain pressure against all forms of unlawful acts at sea.

97. Since the issuance of the Secretary-General's 1999 annual report (see A/54/429, paras. 231-233), another 166 incidents of piracy and armed robbery were reported to IMO between 1 May and 30 November 1999.[23] According to the annual report on piracy and armed robbery of the International Maritime Bureau (IMB) of the International Chamber of Shipping (ICS) for 1999, the Piracy Reporting Centre of IMB had received reports of 285 incidents of acts of piracy[24] and armed robbery as of 31 December 1999, but expected to receive details of additional such incidents for that year in the coming months. Two thirds of the total number of reported incidents had taken place in seven areas: Indonesia, 113 incidents; Bangladesh, 23; Malaysia, 18; India, 14; Singapore Straits, 13; and Somalia/Djibouti and Nigeria, 11 incidents. The attacks in and around Indonesia nearly doubled as compared to 1998. In Somalia pirates were reported to have hijacked ships and demanded ransom and IMB has warned ships to remain at least 50 miles off the coast of that country. The IMB report also provides information about recent anti-piracy measures such as the development of an on-board satellite

tracking system specially designed to locate ships at sea or in port as well as measures taken by States.

98. In October 1999, IMO organized a mission of experts to Nigeria and a regional seminar and workshop for West and Central African countries. The last of the current series of regional seminars and workshops within the context of the IMO anti-piracy project is scheduled to take place in India in March 2000 for countries of the Indian Ocean region (IMO document MSC 72/17/1). The outcome of those seminars and workshops will be reported to the 72nd session of MSC, to be held in May 2000.

99. The Correspondence Group, which was established at the 71st session of MSC to prepare a preliminary draft text for the investigation and prosecution of the crime of piracy and armed robbery, will present its report to the 72nd session of MSC together with a preliminary draft text of an instrument (MSA 72/17/4).

100. The 72nd session of MSC will also be requested to consider a proposal by the United Kingdom (see para. 90 above) and a proposal by France for the adoption of a circular which would provide maritime rescue coordination centres (MRCC) with more detailed directives than currently contained in MSC circulars on the subject on their role in dealing with incidents of piracy and armed robbery, as well as preparatory and operational measures they can take.[25] The sphere of activity of the MRCCs is normally confined to search and rescue.

101. The General Assembly of the United Nations in its most recent resolution on oceans and the law of the sea (resolution 54/31) again expressed its concern at the increasing threat to shipping from piracy and armed robbery at sea and expressed its appreciation and support for the ongoing work of IMO in this area (see also Assembly resolution 54/32). The Assembly called upon States to cooperate fully with IMO to combat piracy and armed robbery against ships, including by submitting reports on incidents to IMO, and also to implement the IMO guidelines on preventing attacks of piracy and armed robbery and to cooperate with the IMO Correspondence Group, established to draw up standard guidelines for Governments in investigating attacks against ships and prosecuting offenders, and with other initiatives of IMO in this area.

102. The General Assembly furthermore urged all States, in particular coastal States in affected regions, to take all necessary and appropriate measures to prevent and combat incidents of piracy and armed robbery at sea, including through regional cooperation, and to investigate or cooperate in the investigation of such incidents wherever they occur and bring the alleged perpetrators to justice, in accordance with international law. The Assembly urged States to become parties to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation and its Protocol, and to ensure its effective implementation.

B. Illicit traffic in narcotic drugs and psychotropic substances

103. As reported by the United Nations International Drug Control Programme (UNDCP), article 17 of the United Nations Convention against Illicit Trafficking in Narcotic Drugs and Psychotropic Substances, 1988 calls upon parties to cooperate to suppress illicit traffic at sea. Two forms of cooperation are envisaged. First, a party that suspects that a vessel flying its flag is engaged in illicit drug trafficking may request the assistance of other parties to prevent the use of the vessel for that purpose. Secondly, a party suspecting that a vessel flying the flag of another party is engaged in illicit drug trafficking may request the flag State to confirm registry and, if confirmed, may request authorization of the flag State to take appropriate measures in regard to the vessel, including authorization to board, search and, if evidence of involvement of illicit trafficking is found, take appropriate measures in relation to the vessel, persons or cargo on board. In order to effect this cooperation, at the time of becoming a party to the 1988 Convention, each party must designate an authority or authorities to receive and respond to such requests and to notify the Secretary-General of the United Nations of the designation.

104. UNDCP pointed out that fundamental requirement for the full implementation of the cooperative provisions of article 17 is for States parties to the 1988 Convention to designate a competent national authority, or if necessary, authorities, possessing the necessary legal power to grant or deny authorization to another State party to board, search or take other appropriate action against a vessel suspected of illicit drug trafficking. The competent national authority needs to be able to respond expeditiously

both to the request for verification of registry and to the request for consent to take action. Full implementation of these provisions has been hampered by the inability to verify registry quickly or by the fact that competent authorities have not been identified or that they lack the necessary legal powers to quickly grant or deny consent. Often small pleasure craft or fishing boats are not registered or States lack a single central registry. To facilitate the cooperation between States pursuant to article 17, UNDCP plans to work with competent authorities to assist them in ensuring an adequate legal framework and to develop practical approaches for building the capacity to respond quickly (see also A/54/429, para. 218).

105. IMO reported that it has considered the problem of drug trafficking within the scope of the 1990 amendments to the 1965 Convention on Facilitation of International Maritime Traffic. The standards and recommended practices adopted by the Facilitation Committee are addressed to the public authorities of the contracting Governments but are applicable only within the jurisdiction of the port State. Consideration could thus be given as to whether IMO should address the issue of drug trafficking beyond the jurisdictional scope of the port State, bearing in mind article 108 of UNCLOS and article 17 of the 1988 Convention.

106. The IMO Assembly at its 20th session adopted resolution A.872(20) entitled "Guidelines for the prevention and suppression of the smuggling of drugs, psychotropic substances and precursor chemicals on ships engaged in international maritime traffic". The guidelines are aimed at covering the following areas: the need to deal in a practical way with the ever increasing problem of combating illicit traffic in narcotic drugs, psychotropic substances and precursor chemicals to reduce the problem for shipping and to prevent illicit drug trafficking; ensuring the movement of innocent cargo; identifying and controlling the movement of precursor chemicals; identifying and controlling illicit narcotic drugs and psychotropic substances and inhibiting their movement by sea during loading, transit and unloading.

107. The guidelines consist of chapter I, "Prevention of illicit drug trafficking", and chapter II, "Control of the transport of chemical products either essential for drug manufacture or precursors" (for further details, see A/53/456, paras. 132 and 133). They also include a list of chemicals and precursors frequently used in the manufacture of narcotic drugs and psychotropic substances, based on the 1988 Convention. Moreover, an annex to the guidelines based on a WHO report shows the physical characteristics of the different illegal substances and the various types of addiction.

C. Illegal traffic in hazardous wastes and other wastes

108. The fifth meeting of the Conference of Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (6-10 December 1999) adopted decision V/23, entitled "Prevention and monitoring of illegal traffic in hazardous wastes and other wastes". The decision, *inter alia*, appealed to parties to the Convention to bring any confirmed or alleged case to the attention of the Basel Convention secretariat and to organize, with the assistance of the secretariat, training courses and to develop training manuals, at the national and regional levels, for customs officers and police forces, in cooperation with the World Customs Organization, the International Criminal Police Organization-Interpol and other appropriate bodies, including United Nations regional commissions and secretariats of regional agreements dealing with similar issues. The Conference of Parties decided that in the future it would adopt procedures to address alleged cases of illegal traffic and to assist parties in preventing, identifying, monitoring and resolving illegal traffic (see also decision V/33, "Environmentally sound management", para. 1(d)).[26]

D. Smuggling of migrants

109. IMO reports that IMO Assembly resolution A.867(20) deals with the task of combating unsafe practices associated with the trafficking or transport of migrants by sea. The resolution (see also A/53/456, para. 140) notes with concern the incidents involving the loss of life resulting from the use of substandard ships for the transport of migrants and refers to the work being carried out in this field by the United Nations Commission on Crime Prevention and Criminal Justice. It invites Governments to cooperate and increase their efforts to suppress unsafe practices, including those associated with the trafficking and transport of migrants by sea. It furthermore invites them to collect and disseminate information about those practices to IMO and to Governments which

might be affected. Governments are requested to detain all unsafe ships and report pertinent information to IMO. The Organization is directed to consider the practice from the point of view of safety and to ensure that it participates in the preparation of any draft convention on the subject.

110. Following the adoption of the resolution, the IMO Maritime Safety Committee at its 70th session (December 1998) approved the interim measures to prevent and suppress unsafe practices associated with the trafficking or transport of migrants by sea (MSC Circular 896). Pending the entry into force of a convention against transnational organized crime, including trafficking in migrants, the MSC circular provides interim, non-binding measures for the prevention and suppression of unsafe practices associated with the trafficking or transport of migrants by sea.

111. The MSC circular (see also A/54/429, paras. 223-228) provides that a State which has reasonable grounds to suspect that a ship exercising freedom of navigation in accordance with international law and flying the flag or displaying marks of registry of another State is engaged in unsafe practices associated with the trafficking or transport of migrants by sea may so notify the flag State, request confirmation of registry and, if confirmed, request authorization from the flag State to take appropriate measures in regard to that ship. The flag State may authorize the requesting State to, *inter alia*, board the ship and inspect and carry out a safety examination of the ship.

112. The circular furthermore provides that when a ship is found to be engaged in unsafe practices associated with the trafficking or transport of migrants by sea, States should: (a) immediately report the findings of the safety examinations conducted pursuant to paragraph 12 of the circular to the administration of the State whose flag the ship is entitled to fly or in which it is registered; and (b) immediately consult on further actions to be taken after giving or receiving reports on the ship involved. Appropriate measures should be taken by States in accordance with relevant domestic and international law. Moreover, States should ensure the safety and the humanitarian handling of the persons on board and that any actions taken with regard to the ship are environmentally sound.

113. When there are reasonable grounds to suspect that a ship is engaged in unsafe practices associated with trafficking or transport of migrants by sea and it is concluded in accordance with the international law of the sea that the ship is without nationality, or has been assimilated to a ship without nationality, States should conduct a safety examination of the ship, as necessary. If the results of the safety examination indicate that the ship is engaged in unsafe practices, States should take appropriate measures in accordance with relevant domestic and international law.

114. The United Nations Centre for International Crime Prevention reported that the revised draft protocol against the smuggling of migrants by land, air and sea (A/C.254/4/Add.1/Rev.4) was discussed by the Ad Hoc Committee on the Elaboration of a Convention against Transnational Organized Crime (see also A/54/429, para. 230). Under section II, the draft protocol deals with smuggling of migrants by sea. The provisions of article 7 (Cooperation and mutual assistance), article 7 *bis* (Measures against the smuggling of migrants by sea), article 7 *ter* (Safeguard clauses) and article 7 *quater* (Application) were derived from the provisions of the 1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances and IMO circular MSC/Circ.896 (see para. 111 above). These articles were discussed during the sixth session of the Ad Hoc Committee (December 1999). The discussion was mainly focused on how to apply the principle of existing international instruments to specific smuggling cases. Further discussions on the draft protocol were planned to be held at the eighth, ninth and tenth sessions of the Ad Hoc Committee, in February, June and July 2000 respectively.[27]

E. Stowaways

115. As reported by IMO, IMO Assembly resolution A.871(20), adopted at the 20th session (November 1997), contains Guidelines on the Allocation of Responsibilities to Seek the Successful Resolution of Stowaway Cases (see also A/53/456, paras. 154-159). The guidelines point to the difficulty in resolving stowaway cases because of the different national legislation in the various countries involved. Nevertheless, some basic principles can be applied generally. The guidelines advocate close cooperation between shipowners and port authorities. Where national legislation permits, national authorities should consider prosecuting stowaways concerning any

damage caused. Countries should permit the return of stowaways who are identified as being their citizens or who have a right of residence, while the country where a stowaway originally embarked should normally accept his or her return pending final case disposition. Every effort should be made to avoid situations where a stowaway has to be detained on board a ship indefinitely.

116. The guidelines go on to establish in greater detail the responsibilities of the master, the shipowner or operator, the country of the first scheduled port of call after the discovery of the stowaway (the port of disembarkation), the country where the stowaway first boarded the ship, the stowaway's apparent or claimed country of nationality, the flag State of the vessel and any countries of transit during repatriation.

117. The Facilitation Committee of IMO at its 27th session noted with concern the considerable number of reports of stowaway incident submitted by member Governments and international organizations[28] and the heavy burden they placed on the ships and crews concerned and on the shipping industry as a whole (see also A/54/429, paras. 241-243). These incidents, which probably represented only a fraction of the real problem, since only a limited number of administrations and organizations had reported, demonstrated that urgent action was needed to deal with the problem. The Committee revised the circular for the reporting of incidents (FAL.2/Circ.50/Rev.1) and instructed the IMO secretariat to issue a quarterly list of incidents and a statistical analysis of the report received for each calendar year on an annual basis. The Committee also established a Correspondence Group to, *inter alia*, identify the issues and major priorities which could be addressed by any future regulation and propose the best and quickest way to proceed to give effect to the content of the IMO Guidelines for the allocation of responsibilities to seek the successful resolution of stowaway cases.[29]

VII. Development and management of marine resources and protection and preservation of the marine environment

118. The 1999 annual report (A/54/429, paras. 244-248), emphasizes that the sustainable development of the oceans and seas is integral to the effective implementation of UNCLOS and contains observations on the economic, ecological and social dimensions of the oceans and seas (estimates of the economic value of the oceans vary from $1 trillion to $7 trillion; estimates of the ecological value vary from $3 trillion to $21 trillion). It is worthwhile to recall, in view of the integrated approach to ocean affairs to be taken by UNICPO, the results of a critical review in 1997 by the Inter-Agency Committee on Sustainable Development (IACSD) of the experiences gained in the United Nations system in the area of sustainable development. IACSD was established in November 1992 by the Administrative Committee on Coordination with the goal of promoting cooperation and joint action within the United Nations system to support the implementation of Agenda 21 and other outcomes of the United Nations Conference on Environment and Development. It was also intended to coordinate responses from the United Nations system to the work of the Commission on Sustainable Development and other intergovernmental bodies and processes in the area of sustainable development.

119. The results of the IACSD review, brought to the attention of the General Assembly by the Administrative Committee on Coordination, underscored that the concept of sustainable development provided an overarching policy framework for the entire spectrum of United Nations system-wide activities at the global, regional and country levels, and called for the implementation of interrelated policies promoting economic development, improved social equity and environmental sustainability (A/S-19/6, annex, para. 2; A/54/131-E/1999/75, para. 6). One must therefore be wary of tendencies to tilt towards one or another side at the expense of the trilateral interrelationship.

A. Conservation and management of living marine resources

1. Marine fisheries

120. The overexploitation of living marine resources, excess fishing capacity, by-catch and discards continue to be of grave concern to the international community (see, *inter alia*, A/53/456, paras. 261-265, and A/52/487, paras. 191-197). In addition, the prevalence of illegal, unregulated and unreported (IUU) fishing is considered to be one of the most severe problems currently affecting world fisheries. It is likely to have

far-reaching consequences for the long-term, sustainable management of fisheries, as stressed by the FAO Committee on Fisheries (COFI) in February 1999 and recognized by the FAO Ministerial Conference on Fisheries (March 1999) and the Commission on Sustainable Development in its decision 7/1 (see also A/54/429, paras. 249-257).

121. The General Assembly, in its resolution 54/32, called upon IMO, in cooperation with FAO, regional fisheries management organizations and arrangements and other relevant international organizations, and in consultation with States and entities, to define the concept of the genuine link between fishing vessels and the State in order to assist in the implementation of the 1995 Agreement on Fish Stocks.

122. COFI made an urgent appeal to States to consider ratifying the FAO Compliance Agreement as soon as possible and, pending its entry into force, to take additional steps to address IUU fishing, including drawing the attention of IMO to the issues of fishing vessel reflagging and ship registration. Following that appeal, several initiatives have been undertaken at the international level, including the development of an international plan of action to combat IUU fishing.

123. Australia, the United States and Canada made a submission to the eighth session of the IMO Subcommittee on Flag State Implementation (London, 24-28 January 2000), inviting the Subcommittee to assist FAO and the Commission on Sustainable Development to combat IUU fishing by cooperating, on the one hand, on measures to ensure that fishing vessels of all flag States meet international rules and standards, especially those provided in article 91 of UNCLOS (Nationality of ships), as well as the provisions of other relevant conventions, and on the other, by further developing port State control, with specific reference to fishing vessels, as a means of complementing the weakness or unwillingness of flag States to fulfil their obligations vis-à-vis vessels flying their flag (see also para. 87 above). Among the views expressed in the Subcommittee were: that FAO's leadership was essential as prime mover for progress to be made on the matter and further information should be provided by FAO on statistics and data of fishing vessels in general, and in particular, of fishing vessels engaged in IUU fishing; and that the fisheries management and conservation aspects of IUU fishing should not be dealt with through the IMO Procedures for Port State Control. As regards the latter, Argentina informed the Subcommittee of the decision of the members of the Viña del Mar Agreement to include vessel inspection as an item on their checklist for port state control of fishing vessels.

124. The Subcommittee decided to recommend to the Maritime Safety Committee and the Marine Environment Protection Committee the establishment of a joint IMO/FAO ad hoc working group and invited FAO to submit a relevant document providing the draft terms of reference for such group to the seventy-second session of MSC (May 2000) for its consideration (see report of the Subcommittee on its 8th session, FSI 8/19, paras. 6.6-6.16). MEPC at its 44th session (March 2000) agreed that IMO, as requested by the General Assembly and the Commission on Sustainable Development, should provide assistance to FAO in dealing with IUU fishing in respect of safety and prevention of pollution of fishing vessels and other related issues. MEPC also agreed in principle, subject to further consideration by MSC, to establish the proposed joint IMO/FAO working group[30] (see also para. 87 above).

125. The Government of Australia, in cooperation with FAO, will organize in Sydney from 15 to 19 May 2000 an expert consultation on IUU fishing with a view to preparing the first draft of an international plan of action to deal effectively with all forms of IUU fishing. The outcome of the meeting will be considered by a FAO Technical Consultation in Rome from 2 to 6 October 2000. The draft international plan of action will then be submitted to the twenty-fourth session of COFI in 2001 for adoption.

126. Regarding fishing agreements between developing coastal States and distant-water fishing States, renewed concerns are being expressed in respect of the extent of the net benefits to the former from such agreements. For example, Morocco has recently estimated that since the conclusion of its first fishing agreement with fishing States in 1988, it has lost $3.5 billion and over 60,000 jobs. Morocco is currently strengthening its fishing industry with an investment of $770 million over 1999-2003. By 2003, the industry is expected to earn $1.3 billion in value added, with an average annual growth rate of 11 per cent.[31] A recent fishing agreement concluded by Papua New Guinea envisages income to be generated from the spending of distant-water fishing vessels in shore-based businesses. But it has been recently reported that such income is not materializing because most vessels

do not call into Papua New Guinea ports. On the other hand, it has been reported that Namibia has entered into fisheries agreements with the European Union based on its own national requirements, and has increased employment in the fisheries sector and increased tax revenues while reducing total allowable catch rates with a view to promoting stock recovery.[32]

127. Mariculture at present accounts for more than 25 per cent of the total global seafood supply. In recent times, the debate about commercial mariculture and traditional fishing has come to the fore. On the one hand, there are concerns about traditional fishermen losing their livelihood to outside investors and non-fishermen as well as possible adverse environmental impacts on coastal ecosystems. On the other hand, it is also recognized that mariculture can increase production, create employment and raise foreign exchange earnings and profits. In India, for example, state governments and the federal government are studying alternative sources of income for traditional fishermen and technologies for environmentally sustainable mariculture.[33] In the United Republic of Tanzania, a multimillion-dollar prawn mariculture project was halted in January 2000 owing to concerns about environmental degradation.[34]

128. Actions to promote patterns of consumption that reduce environmental stress and meet the basic needs of humanity are encouraged by Agenda 21. In this context, with respect to marine fisheries and mariculture, several guides on consumer choices have been disseminated. The most recent ones include the guide to seafood published by the Living Oceans Program of the National Audubon Society of the United States and the seafood guide published by the Monterey Bay Aquarium of California. The former covers 34 species with ratings ranging from those available in sufficient quantities for human consumption to those whose stocks are at a dangerously low level. The Monterey Bay Aquarium, under its Seafood Watch program, lists 11 species that it calls best choices, 14 that are potential problems and 15 that are better avoided; these last include cod, American lobster, monkfish, orange roughy, Chilean sea bass, shark, prawn, swordfish and bluefin tuna (see the Aquarium's web site at www.montereybayaquarium.org). This list was prepared on the basis not only of population conditions, but also of considerations of impacts on habitat, risks and by-catch. However, certain reservations have been expressed by seafood companies and trade associations. The Environment Defense Fund, based in New York, is in the process of setting up a web site tentatively called Seafood Scorecard, which will provide consumer advice with a special emphasis on mariculture (see also para. 127 above).

2. Marine and coastal biodiversity

129. As reported by the secretariat of the Convention on Biological Diversity, in addition to the implementation of the programme of work of the Jakarta Mandate on Coastal and Marine Biodiversity, increasing concern over the problem of coral bleaching has led the Convention secretariat to initiate activities addressing the issue.

130. In order to assist the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) of the Convention on Biological Diversity in addressing the issue at its fifth session, the Executive Secretary of the Convention secretariat convened an Expert Consultation on coral bleaching in Manila from 11 to 13 October 1999, with the aim of identifying the most important scientific, technical and technological aspects of the issue, based on the most recent findings. The Expert Consultation identified a number of issues, such as the ecological, cultural and economic importance of coral reefs for small island developing States; the major factors threatening the survival of coral reefs (in addition to anthropogenic factors, such as the increase of sea-surface temperature); the role of coral bleaching as a potential cause of severe loss of biological diversity; and the socio-economic consequences of the phenomenon. It also identified crucial scientific gaps and uncertainties as well as information gaps and recommended certain priority actions and response options as well as the application of the ecosystem approach to the problem of coral bleaching.

131. At its fifth session, held at Montreal from 31 January to 4 February 2000, SBSTTA endorsed the results of the Expert Consultation, which, *inter alia*, emphasized: information gathering on all aspects of coral bleaching and its long-term effects; capacity-building, through training programmes and other means aimed at investigating the causes and consequences of coral bleaching; policy development/implementation, including use of existing policy frameworks to implement the multiple

conservation measures outlined in the International Coral Reef Initiative (ICRI) Renewed Call to Action (see A/54/429, paras. 321-324); identification and establishment of additional and alternative means of livelihood for people who depend directly on coral reef services; initiation of efforts to develop joint actions among the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the Convention on Wetlands to provide vulnerability assessment, capacity-building and remedial measures on coral bleaching, as well as guidance to financial institutions, including the Global Environment Facility (GEF), to support these activities; efforts of FAO and regional fisheries organizations to develop and implement measures to assess and mitigate the impacts of sea-surface temperature rise on fisheries; mobilization of international programmes and mechanisms for financial and technical development assistance, such as the World Bank, the United Nations Development Programme (UNDP), GEF, regional development banks, as well as national and private sources to support implementation of initiatives to address the causes and consequences of coral bleaching.[35]

132. With respect to the thematic area of marine and coastal biological diversity, including tools for the implementation of the programme of work on the conservation and sustainable use of marine and coastal biological diversity and the analysis of coral bleaching, SBSTTA adopted recommendations regarding: (a) the importance of the Convention on Biological Diversity secretariat's reporting on the application of the implementation tools of the programme of work of the Jakarta Mandate, including for integrated marine and coastal area management (IMCAM), marine and coastal living resources, marine and coastal protected areas, mariculture, and alien species and genotypes, with a view to assessing their efficiency, criteria of success and/or limitations as well as the emerging or expected results and the lessons learned from their application; (b) cooperation with relevant international bodies; (c) full integration of coral reef bleaching into the programme of work on marine and coastal biodiversity; (d) identification of the primary role of climate change in coral reef bleaching and transmission of this view to the United Nations Framework Convention on Climate Change; (e) implementation of response measures to coral reef bleaching, such as capacity-building measures, research and monitoring, community participation and public education programmes; (f) submission of case studies on coral reef bleaching for dissemination through the clearing-house mechanism; and (g) consideration of the need for resource allocation.[36]

133. The Marine Environment Protection Committee of IMO at its 44th session (March 2000) agreed that the discharge of pollutants near coral reefs and other nutrient-sensitive areas should be considered by the Committee in the future.[37]

134. With respect to the equitable sharing of benefits arising from the use of traditional knowledge, innovation and practices relevant to the conservation of biological diversity, an interesting recent development has been an agreement between a native community in India and a research institute associated with an Indian pharmaceutical company to market an herbal tonic derived from a local plant. According to experts, "the agreement ... is seen as a model for so-called bioprospecting efforts endorsed by the 1992 Convention on Biological Diversity. The process has been said to mark perhaps the first time that certain benefits have gone directly to the source of the knowledge of traditional medicines."[38] It would be useful to note the applicability of this instance to marine and coastal biodiversity.

135. The relationship between marine ecosystems and marine biodiversity is extremely complex. One example of this complexity is the recent discovery of the habitats supported by underwater megaplumes. Underwater volcanic eruptions spew forth molten rock loaded with minerals and strange life forms from underneath the seafloor. A newly discovered side effect of such eruptions is the giant underwater twisters of hot water called megaplumes first observed in 1986. During an underwater eruption, boiling water sometimes emerges from the ocean floor and expands until it forms a disk 10 miles wide or greater. At the same time, it begins to rotate and drift away, travelling for months and covering distances of hundreds of miles. Recent findings from studies of megaplumes indicate that their vertical movement can bring energy and food to the sea surface enabling sea areas previously considered barren to sustain marine life. Bacteria that feed on methane and other noxious chemicals provide sustenance for 3-foot-long tubeworms and tiny clams. These life forms, called thermophiles, can survive only in hot spots near the seafloor. Recent studies of megaplumes indicate that they could in fact be mobile ecosystems, moving

horizontally, which transport thermophiles to areas where there are no volcanic or vent activities.

136. As pointed out in earlier reports (A/50/713, paras. 243-244, and A/51/645, paras. 229-232), the general subject of deep-sea biodiversity, as well as the specific issues of the genetic resources of the deep seabed beyond national jurisdiction and of the high seas, raise important questions. They relate not only to the protection and preservation of the marine environment, including that of the international seabed area and the high seas, but also to such matters as the application of the regime for marine scientific research, the duties to conserve and manage the living resources of the high seas and the conservation and sustainable use of marine biodiversity in general.

B. Non-living marine resources

1. Minerals

Offshore oil and gas

137. Since its inception just over 50 years ago, the offshore oil and gas industry has been steadily increasing its share of total world oil and gas production, and at present accounts for about 25 to 30 per cent of total production. Currently, the industry is envisaging producing oil and gas at a depth of 10,000 feet and as far as 250 miles offshore. Experts believe that, apart from the constant rise in world demand for energy, one element that has played a significant role in the growth of the offshore industry is the application of new technology, especially three-dimensional (3D) and four-dimensional (4D) (including time) seismic data acquisition, processing and interpretation; horizontal drilling techniques; subsea completions; multiphase pipelines; and the use of floating production, storage and offloading facilities.

138. With the increasing demand for oil and gas, exploration and development offshore have been shifting to the frontiers in remote and difficult places where little search and discovery activities have taken place in the past, into the deepwater provinces and select areas where salt strata once obscured what lay beneath them. The four regions of greatest recent activity are the Gulf of Mexico, the North Sea, West Africa and South-East Asia.

139. West Africa, especially offshore Angola, Cameroon, Equatorial Guinea, Gabon, Namibia and Nigeria, has witnessed the most intensive offshore oil and gas activities, a major part of them deepwater. The most recent discovery was reported by Texaco of a field offshore Nigeria, drilled from a depth of 4,800 feet to a total depth of about 15,700 feet. The reserves of this field could be in excess of 1 billion barrels of oil equivalent (about 140 million metric tons of oil equivalent), ranking it among the largest single finds to date in deepwater off West Africa.

Other energy sources

140. Research interest is also being directed towards the recovery of methane hydrates, i.e., frozen compounds of methane gas. Vast deposits are held at high pressure 600 to 1,500 feet below the ocean floor on continental margins throughout the world. Scientists have estimated that the amount of organic carbon bound up in ocean-floor methane hydrates is twice that found in all recoverable and non-recoverable oil, gas and coal deposits on earth. Research and development activities with respect to the non-conventional and renewable energy sources — waves, tides, currents, offshore wind, ocean thermal gradients and salinity gradients — are still at the experimental stages. Nevertheless, their huge potential is widely recognized (e.g., the world's total exploitable wave energy resources are conservatively estimated at 400 billion watts).

Non-fuel minerals[39]

141. Marine non-fuel minerals exist in consolidated, unconsolidated and fluid state and are distributed on the seabed of continental margins, deep ocean basins and in seawater. Consolidated deposits can be recovered either by drilling and excavation, if they are insoluble, like metallic ores in bedrock; or by solution mining, if they are soluble, like sulphur and salts. Unconsolidated deposits occur as sediments or nodules that can be recovered by dredging techniques. Dissolved or particulate matter or freshwater can be extracted from seawater by various desalination-type techniques. Developments with regard to marine minerals on continental margins within the exclusive economic zone — consolidated deposits (metals, coal, sulphur, salts, potash, phosphorite), unconsolidated deposits (industrial materials such as sand and gravel, and mineral sands containing gold, platinum, precious gemstones including diamonds, tin, titanium, etc.), and fluid (chemicals contained in seawater and

freshwater) — are detailed in paragraphs 333 to 335 of the 1999 annual report (A/54/429). Developments with regard to marine minerals on the deep seabed within and beyond national jurisdiction (polymetallic nodules, cobalt-rich crusts and polymetallic sulphides) are described in paragraphs 336 to 343 of the same report.

142. Sand and gravel extraction has been and remains a major marine mining industry supplying raw materials for construction, coastal protection and beach replenishment. It is expected to undergo further development worldwide in response to population and economic growth. In response to concerns about beach and coastal degradation, sand and gravel mining is moving further offshore to avoid the adverse effects of recovery on the coastline. The recent accelerated growth of the offshore diamond industry (with an estimated annual output of $1 billion) is expected to continue, according to experts. The extraction of freshwater for consumption, agriculture and industry is expected to increase in response to regional needs and with the enhanced cost-effectiveness of energy used for the desalination processes.

143. With respect to polymetallic sulphides, according to the most recent assessments, sulphides and bioproducts found near the sulphide deposits may be mined from hydrothermal sites on the deep seabed. Destruction of the associated ecosystems can be avoided most effectively by limiting mining to relict sulphide deposits separate from active hot springs. With respect to mining technology, Japan is developing a robotic ocean miner to be tested on a polymetallic sulphide deposit in its exclusive economic zone in the Okinawa Trough. The Metal Mining Agency of Japan is carrying out a five-year feasibility study of this large deposit at a depth of 1,600 metres (about 5,250 feet). If the test is successful, the robotic miner could be used for both polymetallic sulphides and polymetallic nodules.

144. The first licences for the exploration for polymetallic sulphides were issued by Papua New Guinea in 1997 (see A/53/456, para. 302; and A/54/429, paras. 339-340). While Papua New Guinea is approaching the completion of its offshore mining policy, other Pacific island nations, Fiji and the Solomon Islands, for example, using Papua New Guinea's policy as a model, have also started formulating offshore mining policies with assistance from the South Pacific Geoscience Commission (SOPAC), a technical agency supported by 18 Governments in the region. Since the discovery of the first hydrothermal vent and the associated polymetallic sulphide deposit in the South Pacific in 1984, other vents and polymetallic sulphide deposits have been found offshore Fiji, Tonga and Papua New Guinea. Large deposits of manganese nodules have been found offshore the Cook Islands and cobalt-rich crusts offshore the Federated States of Micronesia, the Marshall Islands and Kiribati. In a statement, SOPAC said that the development of marine minerals in the South Pacific could bring sustainable development to some of the world's smallest and least developed countries.

2. Offshore installations and structures

145. Developments with regard to offshore installations and structures, usually associated with the offshore oil and gas industry but not limited to that industry, are detailed in the 1999 annual report (A/54/429, paras. 345-360). These include safety aspects, pollution from offshore activities, issues related to removal and disposal, and applicable international rules and standards for mobile offshore units.

146. The disposal of disused offshore installations has been an important item in the deliberations of the Contracting Parties to the London Convention and the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic. In this context, a recent discovery could be of relevance: Colonies of an endangered coral were found to be growing on the concrete structures of some older oil and gas rigs in the North Sea, about 100 to 200 feet below the sea surface. The finding of the coral has important implications for the future dismantling of obsolete oil and gas platforms. Some experts suggest that an option might be to leave some parts of the structures, for example, huge concrete footings, in place to preserve existing colonies of coral and help it gain more of a foothold in the sea area.

C. Protection and preservation of the marine environment

1. Reduction and control of pollution

(a) Land-based sources and activities[40]

147. The status of implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) as of mid-1999 was discussed in the 1999 annual report (A/54/429, paras. 372-383). The matters addressed included the operational stage of the GPA Coordination Office, the preparation of the regional programmes of action, the identification of sewage as a major land-based source of pollution, the implementation of the GEF-funded Global International Waters Assessment (GIWA) project and the establishment of a clearing house.

148. The UNEP Governing Council at its twentieth session (Nairobi, 1-5 February 1999) adopted decision 20/19 B on the GPA in which it stressed the need for urgent measures aimed at expediting the implementation of the GPA. The Governing Council decided to undertake the first intergovernmental review of the status of implementation of the GPA in 2001, and invited UNEP to organize an expert group meeting, by the end of 1999, to facilitate the preparations for such a review, with the participation of Governments, international organizations and non-governmental organizations.

149. Preliminary ideas on the scope, expected outputs and possible processes for the two above-mentioned meetings were discussed with several Governments, intergovernmental organizations, non-governmental organizations and representatives of the private sector. A format for reporting on progress in implementing the GPA at the national, regional and global levels is being prepared. The preparatory meeting is scheduled to be held from 26 to 28 April 2000 at The Hague. Among the topics for discussion are the process leading to the 2001 review, its expected outcome and financial aspects.

150. The majority of activities to implement the GPA are being undertaken by Governments. Contributions will also be made by international and regional organizations and programmes, non-governmental organizations and others. Within the new strategic direction of the GPA Coordination Office, the three main areas of activities are: (a) assessment/analysis for action; (b) mobilizing action at the national, regional and global levels; and (c) evaluating progress and further development of the GPA.

151. In most of the workshops convened by the GPA Coordination Office, Governments have identified sewage as a major land-based source of pollution affecting human and ecosystem health, and requested UNEP to give priority to that particular pollutant source. The UNEP Governing Council in its decision 20/19 B requested the Executive Director, in cooperation with Governments, United Nations bodies and agencies and other relevant organizations, to explore the feasibility for UNEP to convene, by 2000, a global conference to address the issue of sewage. In response to that decision, UNEP, in close collaboration with WHO, the United Nations Centre for Human Settlements (Habitat) and the Water Supply and Sanitation Collaborative Council, has developed a GPA strategic action plan on municipal wastewater. One of the major expected results could be a global review of the state of affairs, including extent of the problem, hot spots and root causes.

152. The GPA recommended the establishment of a clearing house as a priority for mobilizing experience and expertise, including facilitation of effective scientific, technical and financial cooperation, as well as capacity-building. At the global level, the clearing house is being structured around United Nations organizations responsible for source categories, as specified in the GPA and further elaborated in General Assembly resolution 51/189 of 16 December 1996 on institutional arrangements of the GPA (see also A/53/456, paras. 332-337). The clearing house will underpin all activities of the GPA secretariat, while the methodology to mobilize action at the local, national, regional and global levels will be developed first in the period 2000-2001 for the source category "sewage" (which has been identified as a major priority in developing countries) and then later applied to the other source categories.

153. The central node of the clearing house was launched at the special session of the General Assembly for the review of the Programme of Action for the Sustainable Development of Small Island Developing States in September 1999 (www.gpa.unep.org). During 2000-2001, regional nodes will be developed, as well as the source category nodes by the United Nations lead agencies, including

those for sewage (WHO), nutrients and sediment mobilization (FAO), oil and litter (IMO), persistent organic pollutants (POPs) (UNEP) and physical alteration and habitat modification (UNEP). Two regional seas (Caribbean and South Pacific) have started the development of their clearing-house nodes and prototypes are expected to be ready in early 2000.

154. A significant recent development at the regional level is the formulation of the Protocol Concerning Pollution from Land-Based Sources and Activities to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, adopted at the Conference of Plenipotentiaries held in Aruba from 27 September to 6 October 1999. The Conference was convened by UNEP and was co-hosted by the Governments of Aruba (Kingdom of the Netherlands) and the United States.

155. As reported by UNEP, with the adoption of the Protocol, the countries of the wider Caribbean have taken a giant step towards improved sustainability of their marine and coastal areas and sent a clear signal that the Governments of the wider Caribbean region are committed to preventing and controlling the pollution from land-based activities that threatens their environmental sustainability. It is the first legal instrument in a developing region that establishes regional standards for domestic wastewater and also calls for the development of national laws, plans and programmes to prevent agricultural sources of marine pollution.

156. The role and responsibilities of the Administrative Committee on Coordination (ACC) Subcommittee on Oceans and Coastal Areas (SOCA) and the ACC Subcommittee on Water Resources in facilitating inter-agency cooperation on implementation of the GPA has been agreed by the two subcommittees. The subcommittees will provide a platform for enhanced inter-agency coordination and cooperation in matters related to GPA implementation, by: (a) facilitating input of the individual partner agencies in GPA implementation; (b) commenting and providing advice on the status of GPA implementation and on its future development plans; (c) reviewing, as required, the roles and responsibilities of individual agencies in GPA implementation; and (d) providing a forum for outreach on the GPA.

157. The United Nations Industrial Development Organization has pointed out that industry is a major contributor to the problem of land-based sources of chemical pollution entering the marine environment, although municipal sewage and landfill waste also play a significant part in the overall problem. UNIDO, through its country-based Integrated Programmes, is contributing to solutions to the problem of land-based sources (of pollutants) and activities (e.g., aquaculture and mangrove destruction) that impact harmfully on the marine environment. The programmes of UNIDO include advice on environmental policy formulation, introduction of clean technologies for manufacturing as well as pollution control (monitoring for compliance, municipal waste treatment and treatment of hazardous industrial waste) and environmental management (i.e., impact and risk assessment). UNIDO also has regional activities such as the GEF Gulf of Guinea Large Marine Ecosystem project and the GEF Caspian Sea Environmental Programme, and will be involved, as a lead executing agency, in the GEF Yellow Sea project. These GEF projects deal with transboundary issues of land-based pollution and fisheries resources, in addition to the problems of the component countries. UNIDO has just completed the first phase of the Gulf of Guinea Large Marine Ecosystem project. The final evaluation, which has been carried out, strongly recommends that UNIDO should execute the second phase of the project.

(b) Pollution by dumping; waste management

Disposal of wastes at sea

158. As reported by IMO, as a result of the constant efforts made by IMO and the Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the "London Convention"), dumping activities of industrial wastes have been almost eliminated in contracting States. The Consultative Meeting of Contracting Parties to the Convention also adopted a resolution prohibiting from 1994 onwards any disposal and incineration at sea of industrial wastes as well as the dumping of low-level radioactive wastes.

159. A milestone in the international regulations on the prevention of marine pollution by dumping of wastes has been achieved with the adoption in 1996 of a Protocol to the London Convention. The Protocol represents a major change of approach to the question of how to regulate the use of the sea as a depository for waste materials. It prohibits the dumping of any waste except those listed in the treaty. (This is a reversal of

the system used by the parent convention, which forbids the dumping the of some substances but allows dumping in principle, subject to certain conditions.) The Protocol substantially and comprehensively amends the parent convention and enhances the application of the precautionary approach and of the polluter-pays principle.

160. The General Assembly of the United Nations in its most recent resolution on oceans and the law of the sea (resolution 54/31) expressed concern at the continuing threat posed to the sea by the dumping of nuclear waste and other toxic substances and urged States to take all practicable steps to prevent the pollution of the sea by dumping of radioactive materials and industrial wastes, in accordance with the relevant provisions of the London Convention and its amendments. The Assembly called upon States to become parties to and to implement the 1996 Protocol to the London Convention.

161. The Contracting Parties to the London Convention at the 21st Consultative Meeting (4-8 October 1999) continued their consideration of the issues related to implementation and compliance with the London Convention, and dumping of radioactive wastes. The Consultative Meeting also adopted new terms of reference for its Scientific Group (resolution LC.57(21)) and decided to include the interpretation of "industrial waste" in its agenda for the next meeting to develop a common and consistent interpretation of the term and the reverse list (annex I, para. 11).[41] In this connection it should be noted that no consensus could be reached in the Meeting on whether ocean disposal of carbon dioxide from fossil-fuelled power production would be considered an industrial waste, although the Scientific Group had concluded that it was. The Meeting agreed that the Scientific Group should maintain a "watching brief" on developments in the field of CO_2 disposal and should report to future Consultative Meetings as appropriate.[42]

162. The 21st Consultative Meeting agreed not to establish a standing subsidiary body on compliance issues at that time; instead the Ad Hoc Working Group on Reporting and Compliance, which had been established at the 20th Consultative Meeting and met during the 21st Consultative Meeting, would be convened as and when necessary during future Consultative Meetings. It was agreed to retain "compliance issues" as a regular item on the agenda (see also A/54/429, para. 389).

163. The Ad Hoc Working Group met from 4 to 7 October 1999 and, pursuant to the request of the Consultative Meeting: (a) developed non-compliance scenarios and recommended procedures for their solutions; (b) prepared a draft questionnaire on compliance issues; (c) addressed barriers to compliance; and (d) developed a work plan containing an outline of elements for the implementation of the 1996 Protocol.

164. The Consultative Meeting agreed that the six non-compliance scenarios identified by the Working Group presented a comprehensive picture.[43] The questionnaire on compliance issues prepared by the Working Group was adopted by the Consultative Meeting, which invited Contracting Parties to return the completed questionnaire by 17 March 2000. The Meeting also endorsed the concept project proposal prepared by the Working Group to address the issue of barriers to compliance with the provisions of the London Convention and adopted a work plan containing an outline of elements for the implementation of the 1996 Protocol.[44]

165. The International Atomic Energy Agency (IAEA) introduced the "Inventory of radioactive waste disposal at sea" (IAEA-TECDOC-1105) at the 21st Consultative Meeting (LC 21/INF.5). The document addresses controlled and deliberate disposal of radioactive waste at sea from 1946 to 1993 and clearly demonstrates that most radioactive waste disposal at sea occurs in two areas: the North-East Atlantic and the Arctic Sea area. Dumping occurred in the North-East Atlantic up until 1983, and in the Arctic Sea up to 1993 (see also A/54/429, paras. 390-393).

166. A draft report on accidents and losses at sea involving radioactive materials has been prepared by IAEA and will be submitted to IAEA member States for comment and approval. As regards information on discharges from land-based sources, IAEA informed the Meeting that a computerized database system had been developed and was currently being tested. This work was considered to be an important part of the Agency's contribution to the GPA.[45]

167. The 21st Consultative Meeting adopted the Guidelines for the Application of the *de minimis* Concept under the London Convention, which had been prepared by an Ad Hoc Group of Experts on the subject on the basis of an IAEA report and reviewed by a drafting group at the 21st Meeting (see also A/54/429,

paras. 392-393).[46] The guidelines include a step-by-step evaluation procedure for establishing whether a material can be considered *de minimis* for the purpose of the London Convention (and can therefore be dumped) or whether further evaluations are needed. Some materials may require a specific assessment to determine whether they are *de minimis*. Guidance for the conduct of specific assessments is being developed by IAEA. In the interim, when a Contracting Party authorizes the dumping of material in the area of the high seas, on the basis of a specific assessment, it should include in its reports to the Convention secretariat the assessment criteria used.

168. In discussing the issue of *de minimis* levels of radioactivity, and upon review of the IAEA Inventory, a number of Contracting Parties noted that dumping of radioactive wastes (which are now banned from dumping at sea) had occurred near the coasts of States other than the State responsible for the dumping. The Meeting noted that under the London Convention States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[47]

169. The 1992 Protocol (to the Convention on the Protection of the Black Sea against Pollution) on the Protection of the Black Sea Marine Environment against Pollution by Dumping, which entered into force on 15 January 1994, is going to be reviewed in order to replace the black and grey list approach, with the reverse list approach, as adopted under the 1996 Protocol to the London Convention.[48]

Transboundary movement of hazardous wastes

170. The Conference of Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, at their fifth meeting in December 1999, adopted a Protocol on Liability and Compensation for Damage resulting from the Transboundary Movements of Hazardous Wastes and their Disposal (see also para. 205 below).

171. The Conference also adopted a Declaration on environmentally sound management, which emphasized the urgent need to minimize the generation of hazardous wastes and to strengthen the capacity worldwide for their proper handling. The Declaration, together with Conference decision V/33, entitled "Environmentally sound management", outlines the main areas of focus of the convention during the next decade, which include the prevention, minimization, recycling, recovery and disposal of wastes subject to the convention; cleaner technologies; further reduction of the transboundary movements of hazardous and other wastes; prevention and monitoring of illegal traffic; institutional and technical capacity-building; regional and subregional centres; information exchange; cooperation and partnership among all stakeholders; and the development of mechanisms for compliance with and the monitoring and effective implementation of the convention and its amendments. With regard to the latter issue, the Conference , in its decision V/16, entitled "Monitoring the implementation of and compliance with the obligations set out by the Basel Convention", requested the Legal Working Group to prepare a draft decision for adoption by the Conference of Parties at its sixth session, which would establish a transparent, cost-effective, non-binding mechanism, to be administered by an existing body or a newly created one, that would recommend the best way to promote full implementation and monitor and assist individual Parties in their efforts to implement decisions of the Conference on compliance. The assistance from the body could be requested if specific implementation and compliance questions were raised by a Party or Parties with respect to their own activities or activities of other Parties in which they are directly involved.[49]

172. Other decisions which were adopted by the Conference include decision V/23, "Prevention and monitoring of illegal traffic in hazardous wastes and other wastes" (see para. 108) and decision V/28, "Dismantling of ships" (see para. 44).

(c) Pollution from vessels

173. It should be pointed out that developments presented in other parts of the present report are also relevant to this area, the topic of pollution from vessels, e.g., the main objectives of IMO for the next decade, para. 50; the Integrated Technical Cooperation Programme of IMO, paras. 265-266; flag State implementation, paras. 82-90; port State control, para. 91; and liability and compensation, paras. 194-206.

174. With regard to the prevention, reduction and control of pollution of the marine environment from vessels, IMO identified the following main trends:

175. On the marine pollution prevention side, the trend to enhance the protection of the marine environment has been highlighted by the adoption in 1997 of a new annex VI on prevention of air pollution from ships to MARPOL 73/78.

176. The need to phase out harmful anti-fouling paints used on ships has come to be considered as a priority for IMO. As a result, a diplomatic conference will be convened during the biennium 2000-2001 to consider treaty provisions regulating the use of shipboard anti-fouling systems that have adverse effects on the marine environment. IMO is also working towards another diplomatic conference with the aim of adopting a legal instrument controlling the introduction of harmful aquatic organisms through ships' ballast water.

177. The entry into force of the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC) has led to the development of national and regional emergency response capacity to combat accidental marine pollution from ships. The Conference on International Cooperation on Preparedness and Response to Pollution Incidents by Hazardous and Noxious Substances adopted in March 2000 the Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances (see A/54/429, para. 427). Like the OPRC, the Protocol provides a global framework for international cooperation in combating major incidents or threats of marine pollution. Hazardous and noxious substances are defined in the Protocol by reference to lists of substances included in various IMO conventions and codes.

178. IMO reported that its Assembly at its twenty-first session had adopted resolution A.897(21), entitled "Amendments to the revised specifications for the design, operation and control of crude oil washing systems (resolution A.446 (XI) as amended by resolution A.497 (XII))". The amendments are aimed at simplifying the system for monitoring and controlling crude oil washing in order to avoid any health risks associated with internal examinations of tanks by surveyors.

179. In view of its adoption in 1999 of amendments to Annexes I and II of MARPOL 73/78 (see A/54/429, para. 401), the Marine Environment Protection Committee of IMO at its 44th session (March 2000) adopted Guidelines for the Development of Shipboard Marine Pollution Emergency Plans for Oil and/or Noxious Liquid Substances and amendments to resolution MEPC.54(32) on Guidelines for the Development of Shipboard Oil Pollution Emergency Plans (see MEPC 44/12/1, annexes 2 and 3, and MEPC 44/WP.7, annexes 2 and 3).

180. Discharge of harmful substances carried by sea in packaged form is regulated by Annex III of MARPOL 73/78. MEPC at its forty-fourth session adopted amendments to the appendix to Annex III (MEPC 44/WP.7, annex 1).

181. Annex IV of MARPOL 73/78, which regulates the discharge of sewage from the normal operation of a ship, was revised in order to assist its entry into force. MEPC at its 44th session approved the draft text of the revised Annex IV and adopted a resolution on the implementation of Annex IV.[30]

182. The attention of the 44th session of MEPC was drawn to the problem of plastic debris and derelict fishing gear in the North Pacific Ocean, as a result of increased violations of Annex V of MARPOL 73/78. MEPC approved amendments to Annex V, regulation 3, paragraph 1 (b) (ii), and regulation 9, paragraphs 1 (b) and 3 (a), as well as to the Guidelines for the Implementation of Annex V (MEPC 44/WP.7/Add.1). The United States will be hosting an international workshop on derelict fishing gear, vessels and operational waste in the fall of 2000 (MEPC/44/INF.17).

183. MEPC at its 44th session approved a proposal (MEPC 44/11/4 and Corr.1) to include the North Sea area as a sulphur oxide emission control area under Annex VI of MARPOL 73/78 and a draft IMO Assembly resolution on the availability and use of low-sulphur (bunker) fuel oils in SO_x emission control areas designated in accordance with regulation 14 (3) of Annex VI (MEPC 44/WP.5).

Implementation of MARPOL 73/78

184. MEPC at its forty-fourth session resolved all outstanding issues in relation to chapter 4 (Enforcement) of the draft publication "MARPOL — How to do it" (see A/54/429, paras. 406-408) and approved the publication and its circulation. MEPC agreed that the MARPOL provisions which are complementary to or which require interpretation in the light of the provisions of UNCLOS would be provided in a footnote together with the corresponding UNCLOS

articles. The footnote would be introduced at the end of an introductory paragraph on the relationship between MARPOL and the international law of the sea. No further references to UNCLOS would be included in the text. MEPC also decided to delete all references to an "equivalent zone" to the exclusive economic zone.

185. IMO reported that its Assembly at its twenty-first session had adopted resolution A.896(21) on the "Provision and use of port waste reception facilities" (see A/54/429, para. 410). The resolution requests MEPC to develop guidelines on the provision and use of port waste reception facilities. The resolution notes that while the IMO Comprehensive Manual on Port Reception Facilities provides guidance and technical advice, there is a need for guidelines on how best to plan the provision and utilization of port waste reception facilities that meet the needs of their users.

186. An MEPC correspondence group on reception facilities has been working on the guidelines, which contain information for the provision and improvement of port waste reception facilities and provide information relating to the ongoing management of existing facilities, as well as for the planning and establishment of new facilities. MEPC at its forty-fourth session approved, through a resolution, the Guidelines for Ensuring the Adequacy of Port Waste Reception Facilities prepared by the correspondence group at that session, with minor amendments (MEPC 44/WP.8).

187. IMO pointed out that the lack of reception facilities for dirty ballast water, waste oil and garbage was still a major problem in some areas for the shipping industry and represented the main reason for pollution of the marine environment. Parties to MARPOL 73/78 have a duty to ensure the provision of adequate reception facilities in ports, terminals, ship repair yards and marinas. The provision of reception facilities is particularly important when countries wish their coastal areas to be designated as special areas. Information provided by member States on reception facilities is available on the IMO web site at www.imo.org/imo/circs/mepc/listrec.htm.

Progress in the drafting of new instruments

188. IMO reported that its Assembly at its 21st session had adopted resolution A.895(21), entitled "Anti-fouling systems used on ships" (see A/54/429, paras. 414-415). The resolution states that MEPC should develop a legally binding global instrument to address the harmful effects of anti-fouling systems used on ships. The instrument should ensure a global prohibition on the application of organotin compounds which act as biocides in anti-fouling systems on ships by 1 January 2003, and a complete prohibition on the presence of organotin compounds which act as biocides in anti-fouling systems on ships by 1 January 2008. The Assembly approved the holding of a Conference in 2001 to adopt the proposed legal instrument. The Working Group (see A/54/429, para. 415), which is developing the draft text of a legal instrument, decided at the 44th session of MEPC that the instrument should apply to all ships and also to offshore platforms. The Group also discussed the role of the port State and the flag State in implementing the instrument. At the next session of MEPC (October 2000), the Group will undertake an article-by-article review of the draft legal instrument.[51]

189. The Working Group, which has been charged by MEPC with the development of a legal text on ballast water management (see A/54/429, para. 420), met during the 44th session of MEPC. The Group developed a two-tier approach to the scope of application of the instrument. The first tier would require ships covered by the instrument to meet certain baseline requirements for ballast water management at all times and all over the world, such as requirements for a Ballast Water Management Plan, a Ballast Water Management Record Book and a requirement for some ability to manage sediments. Views were divided on whether technology was currently sufficiently advanced to require existing ships to exercise a primary ballast water management option, such as ballast water exchange, as part of the baseline requirements. Under the second tier, each country would have the right to designate areas in waters under its jurisdiction either as ballast water discharge control areas or as ballast water loading control areas. Countries would designate these areas in accordance with international law. In these designated areas, countries would require different or more stringent measures additional to those set out in the baseline requirements of tier one. The Working Group agreed in principle that after designating an area the country would notify IMO for further necessary action. Agreement was also reached in principle on the responsibilities of flag, coastal and port States and IMO.

Regional developments

190. A Workshop/Symposium on Regional Arrangements for the Provision of Reception Facilities, and for Accession, Implementation and Enforcement of MARPOL 73/78, organized by the Regional Organization for Protection of the Marine Environment (ROPME)/Marine Emergency Mutual Aid Centre (MEMAC) in close cooperation with IMO (October 1999), discussed a feasibility study on reception facilities (see A/54/429, para. 422) and adopted a work plan to be implemented by July 2002. The plan includes having reception facilities in place for waste covered under MARPOL Annexes I, II and V; accession, implementation and enforcement of MARPOL Annexes I, II and V; and the taking effect of the "special area" status under Annexes I and V. The Executive Council of ROPME at its meeting in December 1999 endorsed the outcome of the symposium (MEPC/44/INF.7).

(d) Pollution from offshore activities

191. The IMO Assembly at its 21st session noted that MEPC considered that there was a need for the offshore oil and gas industry and all parties concerned to develop environmental best practice guidelines in offshore oil and gas activities (see A/53/456, para. 258) and agreed to keep the matter under review. The delegation of the Russian Federation stressed the importance of the development of the guidelines and stated MEPC should consider the matter further.[52] It proposed to the 44th session of MEPC that environmental best practice guidelines should be developed taking into account all relevant aspects of the prevention of marine pollution from offshore activities, including the provision of the contingency plan for oil pollution preparedness and response, the provision of oil combating equipment and the further elaboration of the liability regime for oil spills (MEPC/44/13/2).

192. During the discussions in the MEPC session, various views were expressed on the submission of the Russian Federation and, in particular, on the role of MEPC in the development of guidelines. It was generally accepted that matters related to oil pollution preparedness and response should be considered by MEPC's Working Group on Pollution Preparedness, Response and Cooperation while financial responsibilities for oil spills might be considered by the Legal Committee. MEPC recognized that the primary focus of action on environmental aspects of offshore oil and gas activities should continue to be at the national and regional levels, as recommended by the Commission on Sustainable Development in its decision 7/1. However, in view of the fact that there was still a lack of guidelines in some regions and that a number of countries had requested IMO to provide relevant information on how to control marine pollution from offshore activities, MEPC agreed to invite the countries concerned in those regions already having guidelines and interested international organizations to provide information to the next session of MEPC in October 2000. The information could, after consideration and appropriate revision by MEPC, be disseminated as MEPC circulars for reference by the countries and regions concerned when they developed their guidelines. MEPC was informed that an international conference on oil and gas exploration and production, to be held in Norway in June 2000, would discuss relevant environmental issues. The outcome of the conference would be brought to the attention of MEPC.[53]

193. The Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), at its meeting in August 1999, in considering matters of particular concern in relation to the degradation of the marine environment, noted that in areas of South-East Asia, oil and gas exploration and exploitation activities continued to be carried out with little regard for the prerequisite environmental impact assessments (EIAs). Although commercial enterprises were licensed to undertake fossil fuel explorations, which might involve carrying out an EIA, it was necessary for responsible national and regional authorities to enforce agreed standards for such EIAs to ensure their adequacy".[54]

(e) Liability and compensation

194. IMO provided the following information on main trends in the recent period in this area:

195. A major development occurred in the field of liability and compensation with the adoption in 1996 of the International Convention on Liability and Compensation for Damage in connection with the Carriage of Hazardous and Noxious Substances by Sea (the "HNS Convention") and the Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims, 1976 (the "1996 LLMC Protocol"). The HNS Convention establishes a regime of liability

and compensation based on a two-tier system. It covers not only pollution but also other risks such as fire and explosion caused by hazardous and noxious substances. The 1996 LLMC Protocol substantially increases the original limits of compensation laid down in the parent convention in connection with maritime claims for loss of life or personal injury and property claims.

196. The trend towards the international regulation of liability and compensation for maritime claims is being pursued with the consideration by IMO's Legal Committee of a draft treaty on liability and compensation for pollution damage caused by spills of bunker fuel oil.

197. The Legal Committee at its 80th session in October 1999 decided to establish a Correspondence Group on the implementation of the HNS Convention (see A/54/429, para. 441). The Group is intended to be a forum for an exchange of views concerning issues related to the implementation of the HNS Convention and to follow the implementation process in States. Its terms of reference are to provide, with a view to an early entry into force of the Convention at the global level and for the benefit of both potential States Parties and affected industries, guidance on issues regarding the implementation and operation of the Convention.[55]

198. The Legal Committee at its 80th session discussed also, on the basis of an updated version of a draft protocol to the Athens Convention, three main issues, namely the form of insurance, jurisdiction and limits of liability, before proceeding to an article-by-article consideration of the text[56] (see A/54/429, paras. 443-447).

199. The Legal Committee decided to incorporate into the draft protocol a provision to ensure its compatibility with treaties regulating nuclear liability (see LEG 80/3/4). A compromise was also reached on the form of the insurance, whereby the carrier that actually performs the carriage would be required to insure its liability without, however, restricting the possible choices as to the different types of insurance available.[57]

200. IMO reported that its Assembly at its twenty-first session had adopted resolution A.898(21), entitled "Guidelines on shipowners' responsibilities in respect of maritime claims" (see A/54/429, para. 449). The resolution includes guidelines intended to encourage all shipowners to take steps to ensure that claimants receive adequate compensation following incidents involving their ships so as to establish the minimum insurance coverage that ships should carry.

201. As pointed out above (see para. 64), the Joint IMO/ILO Ad Hoc Expert Working Group on Liability and Compensation regarding Claims for Death, Personal Injury and Abandonment of Seafarers, met in October 1999 (see A/54/429, para. 448) and discussed separately the issue of abandonment and the issues relating to claims for death and personal injury. At the Meeting, the International Confederation of Free Trade Unions (ICFTU) and the Seafarers referred to the problems inherent in maritime insurance practice (protection and indemnity (P&I)), which did not require any coverage of crew claims, citing an estimated 5 per cent of uninsured vessels worldwide.[58] The International Shipping Federation (ISF) noted that compensation was provided for in many crew contracts and that in most cases prudent shipowners contracted cover for crew claims through P&I Clubs.[59]

202. The Working Group agreed that claims for personal injury and death was an important matter requiring urgent solutions. Having examined the relevant IMO, ILO and other applicable international instruments,[60] the Group agreed that existing instruments did not adequately address the problem. A number of problems encountered with P&I coverage also needed to be further addressed.

203. The Working Group agreed that further information was needed on existing national schemes and systems for dealing with financial security for personal injury and death. On the basis of the information collected, the Working Group would examine and evaluate possible new approaches for dealing with the issues of financial security for personal injury and death of crew members/seafarers, and in particular would examine the following possible solutions: compulsory insurance; personal accident insurance; national funds; an international fund; other proposals. The Group noted the proposal of the shipowners and seafarers to meet informally with representatives of the P&I Clubs to discuss difficulties encountered and to explore possible solutions concerning certain rules of P&I coverage and to report back to the governing bodies of IMO and ILO.[61]

204. The Legal Committee at its eightieth session made significant progress in resolving a number of outstanding issues in the drafting of a convention for liability and compensation for damage caused by oil

from ships' bunkers. The Committee decided to proceed on the basis of a definition of shipowner similar to that found in the LLMC Convention and to require the registered owner to maintain compulsory insurance coverage. The Committee further decided to recommend the draft convention to the Council of IMO for the convening of a diplomatic conference in the 2000-2001 biennium (see LEG 80/11, paras. 69-115).

205. The Conference of Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, at their fifth meeting in December 1999, adopted the Protocol on Liability and Compensation for Damage resulting from the Transboundary Movements of Hazardous Wastes and their Disposal (see A/54/429, paras. 452-454; see also para. 170 above). The Protocol[62] applies to damage attributable to an incident occurring during a transboundary movement of hazardous wastes and other wastes and their disposal, including illegal traffic, from the point where the wastes are loaded on the means of transport in an area under the national jurisdiction of a State of export (article 3 (1)). However, the Protocol only applies if the damage was suffered in an area under the national jurisdiction of a Contracting Party (article 3 (3) (a)) and if other specified conditions are met. In areas beyond national jurisdiction, the Protocol applies to damage defined in article 2 (2) (c),[63] except loss of income directly derived from an economic interest in any use of the environment, and the cost of measures of reinstatement of the impaired environment (article 3 (3) (c)). Article 3 (7) (a) states that the liability and compensation regime set out in the Protocol is not applicable where the damage is attributable to an incident occurring during a transboundary movement of hazardous wastes and other wastes and their disposal pursuant to a bilateral, multilateral or regional agreement or arrangement concluded and notified in accordance with article 11 of the Basel Convention, and provided that certain specified conditions are met. The Protocol also does not apply if the provisions of a bilateral, multilateral or regional agreement, which is in force, apply to liability and compensation for damage caused by an incident arising during the same portion of the transboundary movement. In this context, the Protocol addresses the relationship between it and the HNS Convention once both instruments enter into force.

206. The fifth meeting of the Conference of Parties to the Basel Convention agreed in decision V/32 to enlarge, on an interim basis, the scope of the Technical Cooperation Trust Fund of the Basel Convention to assist the Contracting Parties which are developing countries or countries with economies in transition to take appropriate emergency measures to prevent or mitigate damage and to enable the provision of compensation for damage to and reinstatement of the environment up to the limits provided for in the Protocol, where the damage is covered by the Protocol but such compensation and reinstatement is not adequate thereunder.[64]

2. Coastal ecosystems[65]

Global ecology and oceanography of harmful algal blooms (GEOHAB)

207. Proliferation of microalgae in marine or brackish waters can cause massive fish kills, contaminate seafood with toxins and alter ecosystems in ways that humans perceive as harmful. The scientific community refers to these events by the generic term "harmful algal bloom" (HAB), recognizing that, because a wide range of organisms is involved and some species have toxic effects at low cell densities, not all HABs are algal and not all occur as blooms. A broad classification of HABs distinguishes two groups of organisms: the toxin producers, which can contaminate seafood or kill fish, and the high-biomass producers, which can cause a deficiency of oxygen and indiscriminate kills of marine life after reaching dense concentrations. Some HABs have characteristics of both.

208. Although HABs were in existence long before human activities began to transform coastal ecosystems, a worldwide survey of affected regions and of economic losses and harm to humans demonstrates unmistakably that there has been a dramatic increase in the impacts of HABs over the last few decades and that the HAB problem is now widespread and serious. Clearly, there is a pressing need to develop effective responses to the threat of HABs through management and mitigation. This requires knowledge of the factors that control the population dynamics (distributions and net growth rates) of HAB species.

209. To address the need for broad-based advancement in the understanding of HABs, IOC and the Scientific

Committee on Oceanic Research (SCOR) have initiated a new international programme of scientific research on the global ecology and oceanography of harmful algal blooms (GEOHAB). The goal of GEOHAB is to determine the ecological and oceanographic mechanisms underlying the population dynamics of harmful algae through the integration of biological and ecological studies with chemical and physical oceanography, supported by improved observation systems. The programme is expected to yield better methodologies for predicting the occurrence, distributions, toxicity and environmental effects of HABs. GEOHAB intends to promote coordinated scientific research and cooperation to develop international capabilities for the assessment, prediction and mitigation of harmful algae.

3. Marine protected areas/Particularly sensitive sea areas

Marine and coastal protected areas

210. The secretariat of the Convention on Biological Diversity reported that the programme of work for the implementation of the Jakarta Mandate on Marine and Coastal Biological Diversity adopted by decision IV/5 of the Conference of Parties to the Convention on Biological Diversity envisages facilitating research and monitoring activities on the value and effects of marine and coastal protected areas or similarly restricted management areas on sustainable use of marine and coastal living resources. The activities are to be carried out pending the establishment by the Conference of Parties of the ad hoc technical expert group called for in decision IV/5. The Convention secretariat reported that criteria for the establishment and management of marine and coastal protected areas would be presented in a document to the fifth meeting of the Conference of Parties.[66]

Particularly sensitive sea areas

211. IMO reported that its Assembly at its twenty-first session had adopted resolution A.885(21) containing draft procedures for the designation of particularly sensitive sea areas (PSSAs) and the adoption of associated protective measures and amendments to the guidelines contained in resolution A.720(17) which had been approved by MEPC at its 43rd session in 1991 (see A/54/429, para. 512). The Subcommittee on Safety of Navigation, which had been invited by MEPC to consider the draft Assembly resolution, had reviewed relevant parts of it at its forty-fifth session in September 1999 and informed the Assembly that it did not find any discrepancies with the General Provision on Ships' Routeing.[67]

212. The resolution includes new procedures for the designation of a PSSA, which supersede the procedures set out in the guidelines in resolution A.720(17). An application to IMO for identification of a PSSA and the adoption of Associated Protective Measures, or an amendment thereto, may be submitted by a member Government, or by two or more members where there is a common interest. The application should include a summary of the objectives of the proposed PSSA identification, the location of the area, the need for protection and a preliminary proposal for Associated Protective Measures, including the reasons why the measures are the preferred method for providing protection for the area to be identified as a PSSA.

213. There are currently two designated PSSAs: the Great Barrier Reef, Australia, and the Sabana-Camagüey Archipelago in Cuba. In the areas, international shipping must comply with specific measures, including routeing measures, to protect the environment and amenities in the designated areas. It should be noted in this connection that the Subcommittee on Safety of Navigation at its forty-fifth session agreed to approve a proposal by Cuba (NAV 45/3/6) for the establishment of an area to be avoided at the approaches to the ports of Matanzas and Cárdenas.[68]

214. As regards the revision of the Guidelines for the Designation of Special Areas and the Identification of Particularly Sensitive Sea Areas (resolution A.720(17)) (see A/54/429, para. 513), MEPC at its forty-fourth session in March 2000 adopted the terms of reference for the Correspondence Group to revise the guidelines (MEPC 44/WP.4). The Group should, *inter alia*, shorten and divide the guidelines into two separate documents: one on the designation of special areas and the other on the identification of particularly sensitive sea areas; take into account the need for consistency with the relevant provisions of UNCLOS; keep in mind the MEPC Guidelines on the Application of the Precautionary Approach; and bear in mind the relevant provisions of other international instruments, such as the Convention on Biological Diversity and the World Heritage Convention, Agenda 21 of UNCED, as well as regional agreements regarding marine conservation and protected areas. In its preparation of a draft revision of

the guidelines, the Group should also consider, in addition to the papers submitted to the forty-third session of MEPC (see A/54/429, para. 513), those which were submitted to the forty-fourth session, i.e., a document by IUCN containing a revision of its original proposal submitted to the forty-third session (MEPC 44/7/1) as a draft proposal for the revision of the Guidelines; and a document by the WWF responding to the issues raised by the United Nations Division for Ocean Affairs and the Law of the Sea in MEPC 43/6/2 and presenting its view that the criteria for PSSAs in the guidelines are fully consistent with UNCLOS and the developing international law regarding marine protected areas. WWF, furthermore, proposed the addition of two new criteria for identifying PSSAs: biogeographic criteria; and international, regional or national significance, to reflect priorities identified by the Convention on Biological Diversity and the World Heritage Convention and the initiative to establish a global representative system of marine protected areas (MEPC 44/7/3).

215. The United Nations Department of Ocean Affairs and the Law of the Sea in its submission to the 43rd session of MEPC (MEPC 43/6/2) examined the relationship between the PSSA Guidelines and the provisions of article 211 (6) of UNCLOS. It pointed out that, unlike the PSSA Guidelines, article 211 (6) required all criteria to be met and, furthermore, that the criteria of scientific and cultural value and scientific and educational and/or archaeological significance might not be consistent with article 211 (6). The establishment of PSSAs because of their "historical and/or archaeological significance" would need to be examined also within the context of article 303 of UNCLOS and developments taking place in other forums. WWF in its submission explained that the PSSA concept could be used to implement the obligations of States in article 197 of UNCLOS, as well as more specific provisions in articles 77, 194 (5), 196 (1), 204 (2), 293, 240 and 303, and that the criteria for special areas under article 211 (6) should be read broadly to include sustainable development as well as protection of associated ecosystems. As elaborated in chapter 17 of Agenda 21, this should take a more comprehensive and integrated approach to management involving all sectors of society.

216. Australia informed MEPC at its forty-fourth session of an Australian project on how it used the IMO criteria together with those of IUCN for identifying PSSAs as a first step in the process of identifying Australian marine areas qualifying for the status of marine environment high-risk areas (MEPC 44/INF.8).

217. MEPC also considered a more detailed proposal by Colombia (MEPC/44/7) for the designation of Malpelo Island as a particularly sensitive sea area (A/54/429, para. 515). The proposal describes Malpelo Island as a small, rocky island (1.8 km long and 0.6 km wide at the maximum) of volcanic origin, with a very high and steep coastline, which is situated 500 km from the Colombian coast. The island and its surrounding waters, which since 1996 have been extended to six nautical miles, is a national protected area. Commercial fishing is strictly prohibited in the protected area. However, one of the main problems is the presence of fishing boats, both Colombian and foreign, which engage in illegal fishing in the vicinity, in particular trawl fishing. Colombia's difficulties arise from the fact that, owing to the isolation of the island and its great distance from the mainland, supervision and control operations are difficult. Patrol vessels cannot be maintained at the site, because it is physically impossible to establish anchorages or to build quays and harbours. Colombia is seeking PSSA status for the island on the basis of its ecological importance for the conservation of species unique to the region, and to the world, and on the basis of ecological, socio-economic, cultural and scientific criteria set out in the annex to the submission. In addition, Colombia is seeking the support of IMO in establishing rules to protect the area, such as defining the island as an area to be avoided, and introducing a traffic separation scheme in the area.

218. The proposal is unique in that it requests IMO to designate an area as particularly sensitive in order to essentially protect it from illegal fishing, an objective which the national protected area designation was intended to accomplish, but could not. The IMO Guidelines do not appear to address the establishment of a PSSA for such purposes. MEPC noted that the proposal, while detailed, did not contain some of the information required in Assembly resolution A.885(21) (see para. 211 above), e.g., a chart showing the area in question; an indication of the extent of risk posed by international maritime activities; types of cargo carried by international traffic; evidence of damage caused by such traffic; any history of groundings, collisions or spills, or a reference to the fact that there had not been any; an indication of the potential harm associated with

such activities; a proposal for Associated Protective Measures available through IMO and an indication of how such measures would provide the protection needed; and an indication of the possible impact of any proposed measures on the safety and efficiency of navigation, taking into account the area of the ocean in which the proposed measures were to be implemented. As a result, MEPC requested Colombia to provide the additional information to a future session for further consideration (see draft report of the MEPC on its 44th session, MEPC 44/WP.6, paras. 7.19-7.21).

4. Climate change

219. Developments with regard to the interrelationship of climate change and the marine environment, the effects of climate change on coastal areas and especially on small island developing States, and the actions being undertaken in this area are described in the 1999 annual report (A/54/429, paras. 516-521). A number of new studies have appeared regarding the interrelationship of climate change and the marine environment, highlighting the complexity of scientific analysis.

220. El Niño and La Niña phenomena are shorter-term oscillations, typically lasting a year or two. There is also a longer-term natural oscillation in the Pacific, called the Pacific Decadal Oscillation, the alternating cycles in sea surface temperature patterns occurring on a scale of decades. The period between the mid-1970s and the late 1990s witnessed one of the alternating cycles when sea surface temperatures were higher in the eastern equatorial Pacific but lower throughout much of the rest of the Pacific. That period was also characterized by more frequent and stronger El Niños and fewer La Niñas. Based on calculations of the movement and temperature of sea surface waters and the varying amounts of heat they contain, on the basis of measurements made by instruments aboard the Topex/Poseidon satellite, scientists believe that the opposite pattern has started in the last two years. This pattern, which is expected to last for two or three decades, will witness cooler waters in the eastern tropical Pacific and warmer waters elsewhere. Fewer and weaker El Niños and more La Niñas are expected during this period. Some scientists, however, caution that it may be too soon to determine whether a true shift has occurred from one multi-decadal regime to another.

221. By analysing climate signals in ocean sediments in the North Atlantic in 1997 researchers discovered that cold spells lasting several centuries have occurred regularly, about every 1,400 to 1,500 years, since the end of the last full ice age about 10,000 years ago. Recently, by combining the results of a number of chemical and physical studies, some scientists postulate that the oscillations in deep-ocean currents may be responsible for the 1,500-year cold cycles. If the postulate can be proved, it would appear that short-term oscillations like El Niño and La Niña occur within medium-term oscillations on time scales of decades (see para. 220), and, in turn, the decadal oscillations occur within longer-term oscillations on time scales of several centuries and millennia. This has an important bearing on the issues related to climate change and global warming.

VIII. Underwater cultural heritage

222. The efforts of UNESCO, in cooperation with Governments and intergovernmental organizations, in developing a draft convention for the protection of the underwater cultural heritage are described in the 1999 annual report (A/54/429, paras. 522-526). The third meeting of governmental experts to consider the draft convention will take place at UNESCO headquarters from 3 to 7 July 2000, in accordance with resolution 30 C/COM.IV/DR.4 Rev. adopted by the UNESCO General Conference at its 30th session.

223. The General Assembly in its most recent resolution on oceans and the law of the sea (resolution 54/31) noted the continued work of UNESCO towards a convention for the protection of the underwater cultural heritage and re-emphasized the importance of ensuring that the instrument to be elaborated was in full conformity with the relevant provisions of UNCLOS. In addition, it requested the Secretary-General to bring the resolution to the attention of the Director-General of UNESCO.

IX. Marine science and technology

A. Marine science

224. The importance of marine science for the development of marine resources, the protection and preservation of the marine environment and the study

of the global environment is well recognized. The Commission on Sustainable Development observed in its decision 7/1 that scientific understanding of the marine environment is fundamental to sound decision-making.

225. In the annual reports of the Secretary-General on developments in ocean affairs and the law of the sea, selective samples of the most recent scientific findings are presented in order to give an idea of the range and diversity of scientific advancements. Over the years, they have also pointed to certain trends in recent marine scientific research (see A/54/429, paras. 528-541; A/53/456, paras. 434-449; A/51/645, paras. 286-294; and A/50/713, paras. 239-246).

226. One such trend is represented by the need for conservation and management of living resources, the interest in genetic resources and the concerns about marine biodiversity, which have led to a surge in research efforts in these areas. For example, scientists in Argentina recently reported that the population of the southern right whale, which had at one time almost been hunted into extinction, is now showing a marked increase off the coast of Argentina, at a rate of nearly 7 per cent a year. Despite the recent recovery, today there are only about 7,000 examples of this huge marine mammal to be found, whereas only 100 years ago they numbered 100,000.

227. Until about 60 years ago, coelacanths, which are believed to have originated 400 million years ago from the same stock of fish that gave rise to the ancestors of land-dwelling four-legged animals, were thought to have been extinct for some 80 million years. In 1938, a live specimen of a coelacanth was discovered off the coast of South Africa, and since then a few habitats of the rare fish have been identified in ocean areas near Madagascar, Mozambique and the Comoros Islands. Recently, coelacanths have been caught 6,200 miles from their known habitats, off the Indonesian island of Sulawesi. Scientists are carrying out a genetic analysis of the tissues of one such specimen to compare it with the African populations to determine whether it constitutes a separate species.

228. In samples of sandstone as compressed sediments retrieved from an oil drilling site about three miles below the seabed offshore western Australia, Australian scientists have recently discovered micro-entities, which, in their view represent the smallest form of life. They have been called nanobes, because their size is in the realm of nanometres, i.e., billionths of a metre. At 20 to 150 nanometres, they are smaller than the smallest known bacterium, which is about 100 nanometres in size. Under the most advanced electronic microscope, capable of magnifying objects nearly 1 million times, the nanobes look like fuzzy tangles of filaments. They reproduce quickly, forming dense colonies of tendrils. To date, the main findings of the scientists are that the colonies of the nanobes contain DNA, are rich in biologically significant elements like carbon, oxygen and nitrogen, and when cut in two show distinct outer and inner layers, including a possible nuclear area that holds DNA. In their future research the scientists will attempt to quantify the growth rate of the colonies and to sequence their DNA, which could help connect them to the known tree of terrestrial life.

229. Sceptics, however, question whether it is possible for such tiny life forms to exist at all. In their view, the tiny sizes would seem to leave too little room for the enzymatic and genetic machinery essential for life. If nanobes are proved to be life forms, this will have fundamental implications for biodiversity: new forms of terrestrial life may be discovered at such depths and in such abundance that some scientists may be led to believe that the planet has a hidden biosphere of microbes extending down for miles, where total mass may exceed that of all surface life (see also A/50/713, paras. 241-243).[69]

230. Another recent trend in marine science may be found in the study of the impacts of land-based activities on the marine environment and exploration of the ways and means of mitigating adverse impacts thereof. For example, it is well known that nitrogen runoff from agricultural activities and other sources travels in streams and rivers down to the ocean. Rivers and streams, however, have a self-cleaning action that removes some of the nitrogen as it flows with the water downstream. A recent study contains the important finding that the rate of nitrogen removal rises as stream size falls: the rates for the smallest stream measured were up to 90 times as high as the rates for the big rivers, for example, the Mississippi. The researchers suggest that their finding could be helpful in devising strategies to control nitrogen runoff to the ocean, particularly in deciding on which watershed to focus effort.

231. Concerns about global warming and climate change have led to a number of marine scientific

research activities in these areas. For example, there is a keen interest in the gigantic icecap of Antarctica, which contains about 90 per cent of the world's ice, because of the possibility that some of it could slide into the sea, thereby causing a rapid rise in the global sea level. One way the Antarctic ice could slide into the sea is through a network of ice streams. These are immense rivers of ice that channel their way through surrounding ice and rock like toothpaste squeezed from a tube. The Antarctic icecap is divided into the East Antarctic and the West Antarctic ice sheets. Although glaciologists have been aware there is a network of ice streams flowing through the West Antarctic Ice Sheet, scientists previously believed that the East Antarctic Ice Sheet was locked into place atop the continent's bedrock, incapable of rapid ice shifts towards the sea. However, radar pictures of Antarctica generated from data collected by a Canadian-American satellite and made public in October 1999 reveal that there is a network of ice streams flowing through the East Antarctic Ice Sheet also.

232. The radar pictures mark the first time that the entire continent has been imaged in fine enough detail to reveal even buried tracks left by snow tractors four decades ago. Radar can penetrate clouds and the snow-covered ice surface, which was not possible using the photographic equipment previously available on satellites and aircraft. Glaciologists do not expect a catastrophe any time soon, nor are they even sure whether Antarctica as a whole is shedding ice at a dangerous rate. But the mere discovery of a mechanism of moving ice to sea from the East Antarctic Ice Sheet in addition to the previously known mechanism of the West Antarctic Ice Sheet has potentially alarming implications.

233. Scientists are also carrying out research on what has happened in similar climatic situations in the earth's past. Based on an investigation of corings and ultrasound readings of sediments on a subsea promontory offshore Florida, American and Australian scientists report evidence that the most extensive global warming in the last 100 million years may have been quite abrupt. A gradual warming of unknown cause appeared at some point to have crossed a threshold that abruptly raised the temperature up to a new level 55 million years ago. "The researchers believe that the original, gradual warming, beginning about 60 million years ago, caused a change in ocean circulation currents that pushed warm surface waters down into the deep sea. This deep-sea warming converted ice-like, solid methane locked in crystalline structures in the sea-floor sediments into gaseous form. This gas then blasted upward through the sediment, starting mudslides that freed the methane and allowed it to escape into the water and eventually to the atmosphere. On the way, it reacted with oxygen to produce globe-warming carbon dioxide".[70] Given all the caveats regarding the limitations of the finding itself, difficulties of comparison between what happened in the transformational climatic event 55 million years ago and what is happening today, and the length of time scale, scientists still believe that the threshold hypothesis and the possibility of sudden abrupt increase in temperature warrant attention.

Programmes on marine science in the United Nations system

234. Brief descriptions of certain programmes, especially those of IOC, are presented in the 1999 annual report (A/54/429, paras. 542-550). According to WMO, an urgent imperative for both WMO and IOC is the implementation and maintenance of an operational ocean observing system, which will provide an integrated stream of oceanographic and related marine meteorological data, in both real-time and delayed mode, for use by national and international agencies and institutions. These observational data have immediate and critical application to global climate monitoring, research and prediction, including El Niño/La Niña prediction, maritime safety and marine environmental protection and management. This requirement for enhanced operational ocean monitoring is also consistent with the identified priority reflected in decision 14/CP.4, entitled "Research and systematic observation", adopted by the Conference of the Parties to the Framework Convention on Climate Change at its fourth session (Buenos Aires, September 1998). The operational system will comprise a large variety of remote-sensing (both satellite and ground-based) and in situ observing platforms, the latter increasingly to include unmanned, free-floating buoys and sub-surface floats. The system will be coordinated internationally through the new Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), an intergovernmental technical body, and will be implemented taking into account joint programmes such as the Global Ocean Observing System (GOOS) and the Global Climate Observing System (GCOS) (for descriptions of

JCOMM, GOOS and GCOS, see A/54/429, paras. 622, 614-620 and 621, respectively).

235. During the Third United Nations Conference on the Law of the Sea, WMO sought and received assurances that the pertinent provisions of UNCLOS on marine scientific research would not have a detrimental impact on routine meteorological and oceanographic observations from ocean areas, including areas within the exclusive economic zone, carried out in the framework of existing international programmes. These observations were judged to be of common interest to all countries and to have universal significance.[71] Such routine observations continue to be carried out within the framework of the World Weather Watch (WWW) of WMO and contribute to the GOOS and the GCOS of WMO, IOC, UNEP and ICSU. The observational data are made freely available to all countries through the Global Telecommunication System (GTS) of WMO.

236. Greatly expanded deployments in recent years of unmanned, automated drifting surface buoys and sub-surface floats are also carried out in the framework of these international programmes, to obtain both meteorological and oceanographic data to support operational meteorology, maritime safety and global climate studies. The data from these platforms are again made freely available to all countries over the GTS. Nevertheless, some concern has been expressed about the status of such platforms in the context of UNCLOS, and in particular that member States should receive appropriate notification of any platforms likely to drift into and report observations from exclusive economic zones.

237. In response to these concerns, and at the initiative of IOC, various actions are being undertaken, most specifically through the new Argo (Array for Real-time Geostrophic Oceanography) project for a global network of drifting sub-surface, as follows: (a) through a joint IOC/WMO circular letter, member States are being informed of the project, its formal acceptance by IOC and WMO as an integral part of existing international programmes of the two organizations, how to access float data and positions, and how to participate in and benefit from the project; (b) an international Argo information centre is being established through IOC, to work in conjunction with a similar technical unit for surface drifting buoys (the centre will, in particular, maintain a web site accessible to all member States, to provide real-time information on individual float status); and (c) operational coordination of float and buoy programmes will take place within the overall international coordination of ocean observing systems to be undertaken by the new Joint WMO/IOC JCOMM floats. (For a description of the Argo project, see A/54/429, para. 550.)

238. IHO is active in cooperating with the United Nations in the implementation of UNCLOS and in 1992 established an Advisory Board on Hydrographic and Geodetic Aspects of the Law of the Sea (ABLOS).[72] ABLOS maintains close contact with the United Nations Division for Ocean Affairs and the Law of the Sea. In addition to the studies of the technical aspects of UNCLOS, IHO is at the forefront in establishing methods for acquiring knowledge of the marine environment and seeking cooperation to achieve adequate global hydrographic data coverage.

B. Marine technology

239. One of the major driving forces of marine technology during the past few decades has been the offshore oil and gas industry. Offshore oil and gas technology has been particularly affected by the industry's move to deeper waters and economic pressures to lower costs while increasing rates of recovery. Developments in marine technology along these lines are described in recent annual reports of the Secretary-General (A/54/429, paras. 326-327; A/53/456, paras. 450-452; A/52/487, paras. 357-364; and A/51/645, paras. 298-300). A recent example of this is the world's first subsea separation and injection system, Subsic, scheduled to come into operation in a Norwegian offshore field within several months. "If Subsic proves a success, it will represent a major step in the industry's drive towards offshore processing operations from the familiar territory of fixed and floating platforms to the seabed. By separating wellhead fluid — oil, gas and produced water — at or near the subsea well on the seabed, at the same time reinjecting unwanted large volumes of water back into the reservoir or treating this for discharge to the sea, the very significant benefit of eliminating pipeline and surface facilities may be realized."[73]

240. Extremely rapid advances in fibre-optics technology, and in cable-laying technology have represented significant trends in marine technology in recent times (see A/54/429, paras. 554-555, and A/53/456, paras. 452-455). The world's largest global telecommunications network, known as Project

Oxygen, which will connect 265 landing points in 171 countries, is expected to have a carrying capacity of 2,560 billion bits (2.56 terabits) of data per second. Phase 1 of the project (described in A/54/429, para. 554), is scheduled to be completed in 2003.

241. Other recent technological advances include the increased use of remotely operated vehicles (ROVs) and autonomous undersea vehicles (AUVs) (cost-effective AUVs with a range of 430 km at a depth of 2 km are currently under development) for underwater operations, wider use of more precise dynamic geopositioning systems, growing application of intricate computer simulations and modelling, and varied use of biotechnology (one such recent use involves a high-heat-tolerant microbe that "greases" the flow of oil through strata for extraction).

242. One trend of the post-cold-war period has been the bonanza of previously classified data and of scientific equipment of the military being made available to the scientific community at large (see A/53/486, paras. 439-441, and A/51/645, paras. 295-297). The most recent example of this is the proposed re-equipment of the nuclear submarines of the Russian navy for use as marine scientific research vessels and even as commercial transport vessels, especially for mineral ores and metal products. This may also be the most effective way to resolve the problem of recycling the submarines; furthermore, an underwater transpolar route may be more economic than other routes.

243. Innovative uses of ocean space, successful at the operational level, have been a significant trend during the past few years. One innovative use, described in the most recent annual reports (A/54/429, para. 558, and A/53/456, para. 459) was the world's first floating platform for launching spacecraft, a commercial project known as Sea Launch implemented by four international corporations from both private and public sectors from the Russian Federation, Ukraine, Norway and the United States. In October 1999, the first to be an American commercial communications satellite was launched from the floating platform of the Sea Launch. During 2000, five or six satellites are expected to be launched from the floating platform; in 2001 and 2002, 8 to 10 satellites will be launched annually.

244. Construction of airports on artificial islands on the high seas is another example of new, innovative uses of ocean space. ICAO reported that it has been asked to provide a legal opinion on the subject.

245. Detailed mapping of the oceans, especially of the ocean floor, has been another important trend in marine technology. As an example, Russian oceanographers have recently completed a digital map of the bottom of the Arctic Ocean based on studies conducted over several decades. They estimate that the Arctic Ocean shelf may be a rich source of raw materials, including oil and gas deposits of about 5 billion metric tons. Russian scientists are also of the view that a large part of the Arctic Ocean may fall within the national jurisdiction of the Russian Federation as a maritime zone, the continental shelf, as defined in UNCLOS.[74]

246. German and Danish scientists recently announced the discovery of a chain of six previously unexplored islands, named the Tobias Islands, 47 miles off the east coast of Greenland. Scientists first spotted the islands from the air in 1997 and later delineated their exact location with satellite images.[75]

Programmes on marine technology in the United Nations system

247. UNIDO reported that it, together with its partner organizations, the United States National Oceanic and Atmospheric Administration, the Centre for Coastal and Marine Sciences (Natural Environment Research Council, United Kingdom) and the International Centre for Science and High Technology of UNIDO, in Italy, have at their disposal a broad range of highest-quality expertise in integrated coastal zone management (ICZM). Areas covered include fisheries management, environmental quality assessment (impact and risk assessment, ecotoxicology, monitoring tools, human health risks), risk factors related to political instabilities and international terrorism, image engineering for GIS, simulation modelling, climatology, expert systems and software engineering. Additional areas of expertise include the use of biotechnology to combat environmental degradation, experience and databases on application of cleaner technologies, technologies for municipal and industrial waste management, economic investment promotion for industrial modernization and environmental planning requirements for the development of "environmentally friendly" technologies.

X. Settlement of disputes

Cases before the International Court of Justice[76]

248. *Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria)*. By an Order dated 21 October 1999, ICJ authorized Equatorial Guinea to intervene in this case. Equatorial Guinea seeks to inform the Court of its legal rights and interests so that they would not be adversely affected by the Court's decision on the maritime boundary delimitation between Cameroon and Nigeria and to protect its legal rights in the Gulf of Guinea.

249. *Legal Issues Subsisting between Nicaragua and Honduras concerning their Maritime Boundary Delimitation in the Caribbean Sea (Nicaragua v. Honduras)*. On 8 December 1999, Nicaragua instituted proceedings against Honduras concerning the "legal issues subsisting" in the question of their maritime delimitation in the Caribbean Sea. Nicaragua stated in its Application that for decades it has "maintained the position that its maritime Caribbean border with Honduras has not been determined", whereas Honduras' position is that "there in fact exists a delimitation line that runs straight easterly on the parallel of latitude from the point fixed on the mouth of the Coco River" in accordance with the Arbitral Award of 23 December 1906 made by the King of Spain concerning the land boundary between the two States which was found to be valid and binding by ICJ on 18 November 1960. Nicaragua claims that the position adopted by Honduras "has brought repeated confrontations and mutual capture of vessels of both nations in and around the general border area" and that "diplomatic relations have failed". Nicaragua has requested the Court "to determine the course of the single maritime boundary between the areas of territorial sea, continental shelf and exclusive economic zone appertaining respectively to Nicaragua and Honduras, in accordance with equitable principles and relevant circumstances recognized by general international law".

Case before the International Tribunal for the Law of the Sea

250. *Case between Panama and France concerning the fishing vessel* Camouco. Proceedings were instituted by Panama against France on 17 January 2000 before the International Tribunal for the Law of the Sea in accordance with article 292 of UNCLOS for the prompt release of the *Camouco* and its crew. The *Camouco* is a fishing vessel registered in Panama and licensed by it to catch Patagonian toothfish (see also para. 24 above).

251. In September 1999, the *Camouco* was arrested by a French frigate allegedly for unlawful fishing of toothfish in the exclusive economic zone of Crozet (French Southern and Antarctic Territories) and thus endangering the renewal of the stock. The *Camouco* and its Master were detained by French authorities in the Island of Reunion (Indian Ocean).

252. Panama requested the Tribunal to order the prompt release of the vessel and its Master and to find that France had violated the provisions of UNCLOS concerning the prompt release of vessels and their crews. Moreover, Panama maintained that the release of the vessel and its crew should be effected against the payment of a reasonable bond. In addition, Panama maintained that France had contravened article 73 (3) of UNCLOS since France had applied to the Master of the *Camouco* measures of a penal character which constituted unlawful detention.

253. By an Order dated 17 January 2000, the President of the Tribunal fixed 27 and 28 January as the dates for the Hearing. On 7 February, the Tribunal rendered its judgment by which it ordered the prompt release of the vessel and its Master upon the deposit of a financial security. The Tribunal first decided on jurisdiction and admissibility and then elaborated on the factors necessary to take into consideration in determining the amount of the financial security, giving directions on the form for its deposit.

254. As regards jurisdiction, the Tribunal found that it had jurisdiction in the case brought before it by Panama and dismissed as without merit the argument by France that since Panama had failed to act promptly it had forfeited any right to request the prompt release of the vessel and its crew it could have had inasmuch as article 292 did not specify a time limit.

255. As for the objection to admissibility on account of non-exhaustion of local remedies before the domestic court (Court of Saint-Denis, Reunion), the Tribunal held that article 292 provided for a quick and independent remedy during which local remedies might normally not be exhausted and that the exhaustion of local remedies could not be read into that article.

256. With respect to the reasonableness of the bond, the Tribunal pointed to its 1997 judgment for the prompt release of the *M/V Saiga*, in which it had determined that the reasonableness criterion encompassed the amount, the nature and the form of the bond or financial security and that the overall balance should be a reasonableness test. The Tribunal also elaborated on a number of factors that it deemed relevant in assessing the reasonableness of the bond or financial security: the gravity of the alleged offences; the penalties imposed or liable to be imposed under the laws of the detaining State; the value of the detained vessel and of the cargo seized; and the amount of the bond imposed by the detaining State and its form.

257. As to the criteria for the form of the bond, the Tribunal, taking into account the relevant factors, decided that the financial security should be 8 million French francs (US$ 1.2 million) and that it should be in the form of a bank guarantee, unless otherwise agreed by the parties.

Case decided by an Arbitral Tribunal

258. *Award of 17 December 1999 by the Arbitral Tribunal in the Second Phase of the Proceedings between Eritrea and Yemen (Maritime Boundary Delimitation)*.[77] A dispute arose between Eritrea and Yemen, two States with opposite coasts in the Red Sea, in December 1995 concerning the territorial sovereignty over four groups of uninhabited islands on the Red Sea, the delimitation of the maritime boundaries between them as well as the use of the waters surrounding the islands by fishermen from both sides. The parties referred the dispute to arbitration and on 3 October 1996 concluded an Arbitration Agreement. The Arbitral Tribunal was requested to settle the dispute between the parties in two phases. The Arbitral Tribunal rendered its decision in the first phase of the dispute between Eritrea and Yemen on 9 October 1998 (for details, see A/53/456, para. 164). Following the first phase of the arbitration and as a sign of their goodwill, on 16 October 1998, Eritrea and Yemen concluded the Treaty Establishing the Joint Yemeni-Eritrean Committee for Bilateral Cooperation.

259. In the second phase, the Arbitral Tribunal was requested to effect the delimitation of the maritime boundaries between Eritrea and Yemen taking into account the opinion that it would have formed on questions of territorial sovereignty, UNCLOS and any other pertinent factor.

260. Taking into account articles 15, 74 and 83 of UNCLOS, the delimitation of the maritime boundary between Eritrea and Yemen by means of a single all-purpose equidistant (median) line between their territorial seas, exclusive economic zones and continental shelves was undertaken by the Arbitral Tribunal in accordance with article 2 (3) of the Arbitration Agreement.

261. The Arbitral Tribunal's equidistant line was determined on the basis of article 15 of UNCLOS and resulted in cutting through the area of overlap in the territorial sea of the parties in the area of the Zuqar-Hanish Group of Islands (Yemen) and the Haycocks and South-West Rocks (Eritrea).

262. With respect to the traditional fishing regime, the Arbitral Tribunal held that there must be free access to and from the islands concerned, including unimpeded passage through waters in which, by virtue of its sovereignty over the islands, Yemen was entitled to exclude all third parties or subject their presence to license, just as it might do in respect of Eritrean industrial fishing. This free passage for artisanal fisherman had traditionally existed not only between Eritrea and the islands, but also between the islands and the Yemen coast. The entitlement to enter the relevant ports, and to sell and market the fish there, was an integral element of the traditional fishing regime.

263. As regards oil and gas exploitation, the Arbitral Tribunal held that the parties were bound to inform and consult one another on any oil and gas and other mineral resources that might be discovered and that straddled the single maritime boundary line between them or that lay in its immediate vicinity.

264. The Arbitral Tribunal therefore found unanimously in the second phase of the proceedings between Eritrea and Yemen that the international maritime boundary between the two States was a series of geodetic lines joining, in the order specified, the points, which were defined in degrees, minutes and seconds, of the geographic latitude and longitude and based on the World Geodetic System 1984 (WGS 84).

XI. Capacity-building and information dissemination

A. Capacity-building

265. As reported by IMO, the importance of technical assistance to developing countries and the form that such assistance will take are reflected in IMO Assembly resolution A.901(21), entitled "IMO and technical cooperation in the 2000s". The resolution states that capacity-building for safer shipping and cleaner oceans is the main objective of IMO's technical cooperation programme during the 2000s. The development and implementation of the Integrated Technical Cooperation Programme (ITCP) of IMO should continue to be based on a number of key principles, including the following: ownership of the development and implementation process vested in the recipient countries themselves; integration of IMO's regulatory priorities in the programme-building process; development of human and institutional resources, on a sustainable basis, including the advancement of women; promotion of regional collaboration and technical cooperation among developing countries; promotion of partnerships with Governments, the shipping industry and international development aid agencies; mobilization of regional expertise and resources for technical assistance activities; coordination with other development aid programmes in the maritime sector; feedback from recipients on the effectiveness of the assistance being provided; and monitoring systems and impact assessments so that programme targets are met and lessons learned are transferred back to the programme-building process.

266. The resolution urges parties to IMO instruments containing provisions on technical cooperation to respond to their commitments and invites member States to use IMO as a coordination mechanism in relation to technical cooperation in the maritime sector. It also invites member States, the shipping industry and partner organizations to continue and, if possible, to increase their support for the ITCP and affirms that the ITCP can and does contribute to sustainable development.

1. Fellowships

267. A major fellowship programme in the field of oceans and the law of the sea, the Hamilton Shirley Amerasinghe Memorial Fellowship Programme, established in 1982 in memory of the late first President of the Third United Nations Conference on the Law of the Sea and administered by the United Nations Division for Ocean Affairs and the Law of the Sea, is described in the 1999 annual report (A/54/429, paras. 588-594), along with the fellowship programme of the United Nations University in fisheries-related skills.

268. In December 1999, on the recommendation of a High-Level Advisory Panel, the Legal Counsel of the United Nations awarded the fourteenth annual Amerasinghe Memorial Fellowship and a special fellowship funded by the Government of the United Kingdom. The awardees were Ms. Fathima Razni Mullafer of Sri Lanka and Mr. Derrick F. P. Oderson of Barbados. A third candidate, Mr. Salieu Kabba Sankoh of Sierra Leone, was also selected in the event that an additional special contribution from one of the donors to the Fellowship Programme became available. Arrangements are being made to place the fellows in the universities or institutions of their choice and they will begin their scholar-in-residence programme in September/October 2000. Meanwhile, the fellow from Papua New Guinea, Ms. Masio Nidung, who received the fellowship in 1999 from funding provided by the Government of Germany, is about to complete her research/study at the Max Planck Institute in Heidelberg, Germany, and will start her internship with the Division for Ocean Affairs and the Law of the Sea in April 2000. Mrs. Arit Mkpandiok, from Nigeria, the recipient of the thirteenth Amerasinghe Memorial Fellowship award, completed her research/study at the School of Law, Dalhousie University, Halifax, Canada, and has commenced her internship programme with the Division.

2. Training

269. The major training programme in the United Nations system in the field of ocean affairs and the law of the sea is the Division's TRAIN-SEA-COAST (TSC) programme, which is supported by UNDP. Developments regarding the TSC programme are reported in the 1999 annual report (A/54/429, paras. 595-602). In September 1999, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) requested the cooperation and assistance of the TSC programme in the design of a training strategy tailored to GPA

priorities, based on the TSC network approach and methodology. The goal of the initiative is to strengthen capacities of countries to effectively devise and implement sustained actions, as recommended by the GPA to prevent, reduce, control and/or eliminate marine degradation from land-based activities. The project builds upon two major assets: (a) the conceptual and practical guidance of the GPA; and (b) the ongoing global training network of the TSC programme.

270. The objectives of the project are: (a) to strengthen existing infrastructure and build capacity at the local and regional levels to develop and deliver high-quality training courses for the GPA; (b) to establish a new TSC course development unit specifically geared to GPA training; (c) to identify existing training courses within the TSC programme that could be adapted to GPA requirements, as well as priority training needs; (d) to develop a training course for global delivery on the "Management of Sewage" for personnel at the municipality level; and (d) to deliver and adapt the above course as many times as required, initially, within three UNEP regional seas programmes with the assistance of existing TSC course development teams or a team of TSC/GPA instructors.

271. In 1999, the International Centre for Living Aquatic Resources (ICLARM) approached the TSC programme to discuss the design of a training component for the International Coral Reef Action Network (ICRAN) project, based on the TSC programme network approach and methodology. One of the activities of the ICRAN Strategic Action Plan aims at creating, with the assistance of the TSC programme, a global cadre of trainers to deliver courses in support of integrated coastal management and coral reef monitoring. These courses will be designed and adapted to the local training requirements of three ICRAN sites/UNEP regional seas programmes. The project builds upon two major assets: (a) the experience and resources of the ongoing global training network of the TSC programme; and (b) the rich information and results provided by parallel ICRAN activities that can be used to develop course materials.

272. The objectives of the project are: (a) to identify and review all existing training materials, including the TSC/Philippines "National Course on Integrated Coastal Management", that could be adapted to the requirements of ICRAN; (b) to adapt/develop a training course for global delivery at the three ICRAN sites/UNEP regional seas programmes; (c) to train approximately 120-150 individuals throughout ICRAN sites/UNEP regional seas programmes; (d) to train a cadre of instructors (TSC Instructor's Course — Training of Trainers), two from each of three ICRAN sites and two from TSC course development units collaborating in this project; (e) to adapt and deliver at three ICRAN sites/UNEP regional seas programmes one of the two training packages on "Management of Protected Areas" that are currently under development by TSC/Red Sea and TSC/Rio de la Plata; (f) to train additional course developers as required by the project, initially one for ICLARM and two for UNEP regional seas programmes where the courses will be delivered; and (g) to provide continuing pedagogic and technical support to course development units working on ICRAN courses.

273. TSC/Germany has recently joined the TSC Network. The new course development unit will be established within the Institute of Geosciences (Coastal Research Laboratory) at the Christian Albrechts University in Kiel, Germany. Once the selected course developers receive training in the TSC methodology, they will develop a course on erosion control and provide training to countries in the Baltic Sea region.

B. Information dissemination

274. Global coverage information is collected, processed and disseminated by all the organizations of the United Nations system in their respective areas of competence in the field of oceans and the law of the sea. Almost all have wide-ranging information systems covering various matters within their areas of competence. They also have advanced and elaborate web sites which are valuable sources of information for the use of member States, intergovernmental bodies, non-governmental organizations, the private sector and civil society at large. For a description of the library and reference collection, information system and web site on "Oceans and the law of the sea" maintained by the United Nations Division for Ocean Affairs and the Law of the Sea (www.un.org/Depts/los), see the 1999 annual report (A/54/429, paras. 605-609).

Information activities in the United Nations system

275. IOC reported that one of the major objectives of its Marine Information Services programme is to provide an increasingly wide number of user communities with up-to-date information on the marine environment. With this purpose in mind, the web-based services have continued their expansion, and they now include: (a) the IOC web site, providing general information on IOC, its programmes and activities; (b) the IOC electronic library, providing free, downloadable access to all IOC publications; (c) the Global Directory of Marine and Freshwater Professionals (GLODIR), providing information on thousands of marine and freshwater scientists, technicians, managers and other professionals in over 100 countries; (d) the IOC activities and events database, which lists ocean-related activities and events organized by IOC and others; and (e) two directories which list marine libraries and information centres around the world.

276. There is an ever-increasing need for ocean data and information, and a need to facilitate the management and exchange of these data. This role is filled by the IOC Committee on International Oceanographic Data and Information Exchange (IODE). IODE's function is to improve the knowledge and understanding of marine resources and the environment by providing a mechanism for the management and exchange of data and information from which this knowledge can be generated.

277. IODE membership consists of over 65 IOC member States, which support the IODE principles of open data exchange and operate oceanographic data centres. The programme is responsible for the management of significant quantities of marine data collected from national, regional and global marine programmes. Data management support is provided to a number of global scientific programmes through cooperating national, regional and world oceanographic data centres. IODE operates several programmes and projects, e.g., the Global Ocean Data Archaeology and Rescue, and works with other groups in a cooperative manner to run programmes such as the Global Temperature and Salinity Profile Programme.

278. IODE specializes in providing services and delivering products. These include CD-ROMs (both data and metadata, for example, the World Ocean Database '98, a set of 9 CD-ROMs), inventories, catalogues, development of standards, etc. The sixteenth session of the IOC/IODE Committee will be held in Istanbul, Turkey, from 18 to 26 April 2000. Special attention will be placed on the more effective utilization of IODE's comprehensive systems facilities and mechanisms for new or developing data and information services and products, programmes and projects. Efforts will be made to encourage cooperation with industries and, as appropriate, with the military in data and information exchange. This issue will be on the agenda of a conference to be held in 2000 on the role of the military and industries in ensuring the environmental quality of the oceans.

279. A key element of the IOC regional activities continues to be the need for improving ocean data and information management facilities and training. High-quality data and information are essential for the sound management of the coastal zone. IODE projects in the East Africa region show that it is often more effective to address ocean data and information management problems at the regional than at the national or global level. One IOC regional project is Regional Cooperation in Scientific Information Exchange in the Western Indian Ocean Region, which has been able to: (a) provide marine scientists with access to essential scientific literature; (b) develop and maintain a regional directory of marine scientists providing information on indigenous expertise; and (c) publish a regional newsletter providing information on institutions, projects and scientists working in the region. Another is the Ocean Data and Information Network for Eastern Africa project, which combines data and information management as part of a more comprehensive project called ODINAFRI (Ocean Data and Information Network for Africa). Building upon the experience and success of these projects, a Pan-African data and information management project is now being planned, combining the objectives of these projects as well as expanding them to develop data and information products to respond to the needs of a wide variety of users. Steps are being taken to use the same approach in other regions, such as the Caribbean and the Western Pacific.

XII. International cooperation and coordination

A. Cooperative programmes

280. In the field of ocean affairs and the law of the sea, formal as well as informal cooperation is quite extensive among the organizations of the United Nations system, in many cases extending to other intergovernmental bodies, governmental agencies, the private sector, non-governmental organizations and stakeholders, in the widest sense. To give an idea of its scope, coverage and content, a sample of the most important cooperative programmes is presented in paragraphs 612 to 626 of the 1999 annual report (A/54/429). These include the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), the Global Ocean Observing System (GOOS), the Climate Variability and Predictability programme (CLIVAR), the Joint Technical Commission for Oceanography and Meteorology (JCOMM) and the Aquatic Sciences and Fisheries Abstracts (ASFA).

Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)

281. GESAMP will hold its thirtieth session from 22 to 26 May 2000 at the Marine Environment Laboratory of IAEA in Monaco. At the session, GESAMP is expected to focus on four areas of ongoing concern: evaluation of the hazards of harmful substances carried by ships; estimates of oil entering the marine environment from sea-based activities; marine environmental assessments; and matters of particular concern regarding the degradation of the marine environment. Of these, marine environmental assessments will receive particular attention. The Marine Environmental Assessments (MEA) Working Group of GESAMP and its Editorial Board made substantial progress during the inter-sessional period with a view to submitting final drafts for review and adoption by GESAMP at its thirtieth session of two major reports: a biennial report on the state of the marine environment, now entitled "Sea of Troubles — Issues in Focus", and a report on "Land-based sources and activities affecting the quality and uses of the marine, coastal and freshwater environments".

282. Preparation of these reports is being carried out under the leadership of UNEP as a part of its assessment activities and its contribution to the intergovernmental review meeting on the progress in the implementation of the GPA. With a view to finalizing the two MEA reports for review and adoption by GESAMP, the MEA Editorial Board met from 14 to 19 November 1999 in Barcelona and again from 7 to 9 February 2000 at The Hague. The latter meeting immediately followed, and reviewed the results of, the fourth meeting of the MEA Working Group (31 January-5 February 2000), which considered comments received on the drafts of the two reports and advised the Editorial Board on amendments to be made in finalizing the drafts for submission to GESAMP.

283. At the 30th session, GESAMP is also expected to approve an updated Memorandum of Understanding prepared largely in response to the interest expressed by the Commission on Sustainable Development in its decision 7/1 in the improvement of the effectiveness and inclusiveness of GESAMP (see A/54/429, para. 613). Once approved by GESAMP, it would be submitted for signature by the executive heads of organizations sponsoring GESAMP.

Aquatic Sciences and Fisheries Abstracts (ASFA)

284. Among the recent important developments relating to ASFA is the renewal for a further four years of the Publishing Agreement between FAO, as the secretariat of ASFA, and the publisher of ASFA (Cambridge Scientific Abstracts, CSA). The new Agreement features increased benefits to the ASFA partners, including free access to the ASFA database via the CSA Internet Database Service. Other developments include the admission to ASFA of three new national partners — Côte d'Ivoire, Peru and Republic of Korea — bringing the total number of ASFA national partners to 30. Increasing the size of the ASFA partnership is a major ongoing goal intended to expand ASFA's geographical coverage and substantive coverage of the literature. A further development is the beginning of the distribution free of charge of all ASFA CD-ROMs to 25 institutes located in low-income food-deficit countries in Africa.

United Nations Atlas of the Oceans

285. The United Nations Atlas of the Oceans is being developed as a digital, web-based, interactive tool, containing information relevant to the sustainable development of the oceans and to the advancement of ocean science. The Atlas is being constructed from existing documents (statistics, maps, texts, reviews, images, etc.) available to the United Nations agencies as well as in national and Consultative Group on International Agricultural Research (CGIAR) centres of excellence and NGOs. It will become a long-term output of the United Nations system, regularly updated in cooperation with a private-sector publisher. The core agencies for this joint project of the ACC Subcommittee on Oceans and Coastal Areas (SOCA) are FAO, IAEA, IMO, UNESCO/IOC, UNEP and WMO.

286. Among recent developments concerning the Atlas, the representative of FAO, which is the lead agency, presented to SOCA at its eighth session the report of the first meeting of the United Nations Atlas Technical Committee (Rome, 9-10 December 1999), including the results of the Committee's deliberations on: (a) the structure and content of the Atlas; (b) the software options for the Atlas web sites; (c) the status of the various institutional agreements; and (d) the arrangements for data and information collection.

287. In its capacity as the Steering Committee for the United Nations Atlas of the Oceans Project, SOCA at its eighth session (The Hague, 19-21 January 2000) adopted the report of the Technical Committee, and in particular endorsed the following technical decisions:[78] the original data used for charts and maps should be available and accessible to the users; priority should be given to the use of existing information (as opposed to generating new information); priority should also be given to data clearly related to policy matters; general background information should also take into account the needs of a broad community of users; maps, charts and in general all documents should have a common "look and feel"; introductory documents should be brief, policy-oriented notes leading to more detailed, specific and background information and should preferably be translated into the official languages of the United Nations; documents should be, as far as possible, written in a time-independent manner to increase their shelf life and reduce the need for updating; and lead agencies will be nominated for specific issues, uses, and information domains to coordinate the inputs into the Atlas.

B. Subcommittee on Oceans and Coastal Areas of the Administrative Committee on Coordination

288. Responding to the need for coordination in the field of marine affairs, in particular as emphasized in chapter 17 of Agenda 21, following the United Nations Conference on Environment and Development, the Administrative Committee on Coordination, acting on a proposal from the newly created Inter-Agency Committee on Sustainable Development, established the Subcommittee on Oceans and Coastal Areas.

289. SOCA held its eighth session at The Hague, from 19 to 21 January 2000. Participants included 14 representatives from 8 United Nations organizations and a representative from the secretariat of the Convention on Biological Diversity. Also in attendance as an observer was a representative of the Global International Waters Assessment (GIWA).

290. Among the items discussed by the Subcommittee were the United Nations Atlas of the Oceans (see paras. 285-287); status of the GIWA; the revised Memorandum of Understanding for GESAMP (see para. 283); the establishment of UNICPO by the General Assembly in its resolution 54/33; and making the Subcommittee more transparent, effective and responsive, as recommended by the Commission on Sustainable Development in its decision 7/1 (see A/54/429, paras. 629 and 637, reiterated by the General Assembly in resolution 54/33, para. 8 (b)).

291. Concerning the GPA, SOCA agreed that its main role was to provide a platform for enhanced interaction/coordination and cooperation in matters related to GPA implementation. It also addressed the development of the GPA clearing house, a strategic action plan for a global conference on sewage and the process leading to a 2001 global GPA review.

292. With respect to enhanced transparency, effectiveness and responsiveness of SOCA, IACSD at its 14th meeting (Vienna, 9-10 September 1999) had endorsed the suggestions of SOCA regarding regular briefings on SOCA's activities, its web site and brochure (see A/54/429, para. 630). SOCA at its eighth session concluded that coordinated executive action

could only ensue following the due process of endorsement and financing within each agency's governing structure. SOCA reported on its ongoing and planned activities, which currently comprise: (a) proactive production of contributions to the system-wide reporting task to international bodies such as the Commission on Sustainable Development (as the task manager for chapter 17 of Agenda 21), the General Assembly (contributing to the Secretary-General's annual report on oceans and the law of the sea), the Plan of Action for the Sustainable Development of Small Island Developing States, the GPA and the new UNICPO; (b) joint production of the United Nations Atlas of the Oceans; (c) forward implementation of the GPA; (d) assistance to GIWA in the production of a policy-oriented global water assessment process; (e) development of regional applications of joint activities as necessary; and (f) provision of coordinated input to "Rio+10" and its preparatory process, ensuring that due attention is given to the oceans and coastal areas.

293. As a side event during its eighth session, SOCA presented a briefing attended by 37 diplomatic missions at The Hague on its activities as the task manager for chapter 17 of Agenda 21. Four topics were presented: (a) status of implementation of the GPA; (b) UNICPO as recently established by the General Assembly; (c) United Nations Atlas of the Oceans; and (d) addressing critical uncertainties for marine environmental management and climate change. Also during the eighth session the newly developed prototype of the ACC-SOCA web site was demonstrated and areas of further development were agreed upon. Moreover, SOCA is in the process of developing a brochure describing its activities.

294. The newly established UNICPO was discussed extensively by the Subcommittee. Among several issues raised, SOCA took note of the request by the United Nations for supplementary inputs from the organization's members of SOCA further to the most recent report of the Secretary-General on oceans and the law of the sea (A/54/429). The supplementary information is to be presented to the first meeting of UNICPO, to be held from 30 May to 2 June 2000. SOCA also expressed the collective willingness of the SOCA agencies to participate actively in this very comprehensive consultative process, and agreed to provide a joint written report to the first meeting of UNICPO on its activities and to invite all agencies and organizations to participate actively.

C. Suggestions on initiatives to improve coordination and cooperation

295. In response to the request of the General Assembly in paragraph 7 of its resolution 54/33 for suggestions on initiatives that could be undertaken to improve coordination and cooperation and achieve better integration on ocean affairs, the Secretary-General believes that formulating such initiatives should be understood as a process and that, following the guidance provided by the General Assembly, fostering the participation in UNICPO of intergovernmental organizations, specialized agencies and funds and programmes of the United Nations engaged in activities relating to ocean affairs and the law of the sea, and that of the Subcommittee on Oceans and Coastal Areas of the Administrative Committee on Coordination, and their input to his report on oceans and the law of the sea was a first step in that process. Devising initiatives for improved coordination and cooperation in ocean affairs is, by its very nature, a cooperative endeavour. In this context, a related step was to initiate a process of exchange of ideas about initiatives that could be undertaken to improve coordination and cooperation and achieve better integration on ocean affairs and to invite feedback from all relevant organizations. It is expected that the first meeting of UNICPO, based on the contributions of Governments, inter-governmental organizations, non-governmental organizations and other major groups, would further the process by exploring initiatives that could be agreed upon by all stakeholders.

296. According to the Executive Secretary of the secretariat of the Convention on Biological Diversity, the positive experience of the Convention secretariat in establishing cooperative links and synergies with relevant conventions, organizations, bodies and initiatives active in the areas relevant to the implementation of the Convention secretariat's programme of work on the conservation and sustainable use of marine and coastal biological diversity could prove very useful in this context.

297. In relation to the first phase of the implementation of the programme of work, the secretariat of the Convention on Biological Diversity has devoted much effort to the establishment of a dialogue with other relevant processes and activities, with the aim of coordinating with them to produce the outputs envisaged by the work programme. As a result,

several regional conventions for the protection and sustainable development of the marine environment (Cartagena, Barcelona, Jeddah, Kuwait, Lima Conventions, etc.) have integrated the provisions of the Convention on Biological Diversity into their programmes, and the programme of work of the Biodiversity Convention secretariat is now being implemented regionally through those conventions. Furthermore, international organizations active in promoting scientific cooperation, sustainable development and environmental protection (IOC/UNESCO, World Bank, UNEP, FAO, Commission for the Protection of the South Pacific, South Pacific Regional Environment Programme, etc.) have taken into account, as appropriate, the provisions of the Convention on Biological Diversity in regard to marine and coastal biodiversity.

298. Based on this experience, the Executive Secretary of the secretariat of the Convention on Biological Diversity is of the view that a key tool for improving coordination and cooperation and achieving better integration on ocean affairs is for relevant actors to inform each other about their respective provisions and activities; to follow up on that exchange of information (at the secretariat level) by harmonizing those provisions and activities; and to report to their respective parties/member States about how to adjust their programmes accordingly.

299. The Secretary-General of the World Meteorological Organization (WMO) explained that his organization had long had an interest in and involvement with the marine environment and ocean affairs. The activities and programmes of WMO and of national meteorological services in this important field were increasing continually. Since much of the ocean-related work of WMO also involves other disciplines and many different marine user communities, it has always sought to collaborate and coordinate closely with other international organizations, both bilaterally and through mechanisms such as ACC/SOCA. The Secretary-General of WMO highlighted the recent establishment of the Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM), which constitutes a significant advance in inter-agency cooperation and integration beyond existing joint working groups and similar bodies: it is intergovernmental, it has the status of a constituent body of WMO and the equivalent body of the Intergovernmental Oceanographic Commission (IOC) and it involves a substantial commitment of resources and expertise on the part of both agencies. It is expected to lead to enhanced efficiency and cost-effectiveness in the joint work of WMO and IOC in marine meteorology and oceanography and may also result in improved coordination among national agencies dealing with these same questions.

300. According to the Secretary-General of WMO, the concept of JCOMM represents a major innovative development within the United Nations system, which is worthy of consideration for wider application. WMO will be examining possibilities for similar initiatives in other aspects of its work where it already cooperates closely with other United Nations agencies and feels that there is even wider scope for similar developments elsewhere in the system.

301. The Executive Director of UNEP has indicated that he would provide feedback requested by the Secretary-General following consultation with the secretariats of the UNEP-administered regional seas conventions and action plans.

302. The Secretary-General suggests that during the deliberations in UNICPO on initiatives to improve international coordination and cooperation and achieve better integration on ocean affairs, it may wish to bear in mind a number of pertinent issues, including those raised by SOCA at its eighth meeting.

303. As the Secretary-General has previously stated, "there is often a perception that the follow-up to the United Nations Conference on Environment and Development and other United Nations conferences is primarily the responsibility of the United Nations system in general, and of task managers in particular. It needs to be emphasized that actions need to take place primarily at the national level, with Governments, non-governmental organizations, the private sector and others as the main actors. **The role of the United Nations system is, *inter alia*, to facilitate cooperation among major actors to enhance action at the national level**" (A/54/131-E/1999/75, para. 43; ACC/2000/8, para. 47; emphasis added).

304. The above view gains in importance when one notes that among international organizations, a distinction is made between sectoral issues, which are considered to be of a technical nature, and trans-sectoral issues (see ACC/2000/8, para. 69). For sectoral issues within the competence of each organization, it is the governing bodies of the respective organizations

that provide their mandate. For action, given the interrelatedness of ocean issues, UNICPO, while deliberating on measures to improve coordination and cooperation, should bear this distinction in mind. This would correspond to the guidance provided by the General Assembly in paragraph 11 of its resolution 54/33, in which it "invites Member States, as part of their participation in relevant competent bodies of intergovernmental organizations engaged in activities relating to ocean affairs and the law of the sea, to encourage their participation in the consultative process and their contribution to the report of the Secretary-General on oceans and the law of the sea."

Notes

[1] Commission on Sustainable Development decision 7/1, "Oceans and seas" (hereinafter referred to as CSD decision 7/1), para. 1 (b); *Official Records of the Economic and Social Council, 1999, Supplement No. 9* (E/1999/29), chap. I.C. decision 7/1, para. 1 (b).

[2] *Official Records of the Economic and Social Council, 1996, Supplement No. 8* (E/1996/28), chap. I.C., decision 4/15.

[3] See also A/54/429, para.506.

[4] Report of the fifth meeting of the COP, document UNEP/CHW.5/29, paras. 77-78, and annexes I and VI.

[5] Submission by the International Chamber of Shipping, the Baltic and International Maritime Council, the International Association of Independent Tanker Owners, the International Association of Dry Cargo Shipowners, the Oil Companies International Marine Forum and the International Confederation of Free Trade Unions, document MEPC 44/16/4.

[6] Excepted from the contribution of IMO.

[7] Excepted from the contribution of IHO.

[8] IMO/ILO/WGLCCS 1/7.

[9] Documents presented by ICFTU; see IMO/ILO/WGLCC 1/6/1 and IMO/ILO/WGLCC 1/6/2.

[10] ILO's submission reviews relevant international instruments (IMO/ILO/WGLCCS 1/7).

[11] This was pointed out in the submission by the International Shipping Federation, document IMO/ILO/WGLCCS 1/6.

[12] Report of the first session of the Ad Hoc Expert Working Group, IMO/ILO/WGLCCS 1/11, paras. 4.1-4.13, 6.1-6.50, and annexes 4, 5 and 6.

[13] The Seamen's Church Institute has also recently published a Seafarer's Handbook, which is a compendium of information about all aspects of the seafarer's job.

[14] See report of the 45th session of the IMO Subcommittee on Safety of Navigation, NAV 45/14.

[15] Report of the 71st session of MSC, document MSC 71/23, paras. 9.13-9.17.

[16] MSC 72/2, para. 7.

[17] NAV 45/14, paras. 3.7-3.15, and annexes 2-4.

[18] MSC 71/23, para. 20.30.

[19] NAV 45/14, paras. 3.31-3.32 and 3.34.

[20] See draft report of MEPC on its 44th session, MEPC 44/WP.6, paras. 8.9-8.13.

[21] Opening statements, papers presented by the participants and the Rapporteur's report are available on the web site of the Institute of Policy Studies, Singapore, at www.sils.org/seminar/1999-straits-00.htm.

[22] For a summary of initial ideas at the meeting of the Working Group, see document FSI 8/INF.7, annex.

[23] See MSC circulars 924 and 935-938, at www.imo.org/imo/circs/msc/piracy/list.htm.

[24] IMB defines piracy as "an act of boarding any ship with the intent to commit theft or any other crime and with the intent or capability to use force in the furtherance of that act". IMB's definition allows for crimes of stealth and attacks from shore when the ship is berthed.

[25] See document MSC 72/17/5. The proposed circular defines piracy to mean an act defined by article 101 of UNCLOS and armed robbery as an act committed within the territorial waters or internal waterways.

[26] For the text of decisions V/23 and V/33, see report of the fifth meeting of the Conference of Parties, UNEP/CHW.5/29, annex I (see www.unep.ch/basel/COP5/cop5reportc.pdf).

[27] For the text of document A/AC.254/4/Add.1/Rev.4, see www.uncjin.org/Documents/Conventions/dcatoc/7session/index.htm.

[28] For consolidated information on stowaway cases, see FAL.2/Circ.57, at www.imo.org/imo/circs/fal/57.pdf.

[29] Report of the Facilitation Committee, document FAL 27/19, paras. 10.1-10.11.

[30] See draft report of MEPC on its 44th session, MEPC 44/WP.6, paras. 8.9-8.13.

[31] *BBC International Reporting Service*, 31 December 1999.

[32] International Centre for Trade and Sustainable Development (ICTSD) and IUCN, *Fish for Thought* (Geneva, ICTSD 1999), p. 15.

[33] *The Earth Times*, Year 9, No. 2, 15 February 2000, p. 3.

[34] *BBC International Reporting Service*, 28 January 2000.

[35] Report of Expert Consultation on Coral Bleaching (UNEP/CBD/JM/Expert/2/3).

[36] *Earth Negotiations Bulletin*, vol. 9, No. 143: summary of the fifth session of SBSTTA (www.iisd.ca/linkages/vol09/enb09143e.html).

[37] See draft report of MEPC on its 44th session, MEPC 44/WP.6/Add.3, para. 12.38.

[38] P. Bagla, "Bioprospecting: model indian deal generates payments", *Science*, vol. 283, No. 5408, 12 March 1999, p. 1614b.

[39] The following material is primarily based on Peter A. Rona, "Marine minerals for the 21st century", paper to be presented at the International Geophysical Congress, Rio de Janeiro, Brazil, 6-17 August 2000.

[40] Excerpted from the contributions of UNEP and the GPA Coordination Office.

[41] See report of the 21st Consultative Meeting, document LC 21/13, paras. 5.10-5.12 and 10.1-10.2.

[42] Ibid., paras. 5.18-5.27.

[43] For details, see ibid., paras. 4.11-4.13.

[44] Ibid., paras. 4.14-4.16 and annexes 2, 3 and 4.

[45] Ibid., paras. 6.23-6.29.

[46] Ibid., annex 6.

[47] Ibid., paras. 6.11-6.12.

[48] Ibid., para. 7.7.

[49] For the text of the declaration and decisions adopted by the Conference of Parties, see report of the fifth meeting, document UNEP/CHW.5/29, at http://www.unep.ch/basel/COP5/cop5reportc.pdf.

[50] See draft report of MEPC on its 44th session, MEPC 44/WP.6/Add.3, paras. 12.39-12.41.

[51] Ibid., paras. 3.20-3.21.

[52] See A 21/5(b)/2, paras. 50 and 51.

[53] Draft report of MEPC on its 44th session, MEPC 44/WP.6/Add.2, paras. 13.11-13.13.

[54] Para. 7.5 of the report of the 29th meeting of GESAMP, published as GESAMP Reports and Studies No.67, also mentioned in the report of the 21st Consultative Meeting of Contracting Parties to the London Convention, LC 21/13, para. 9.6.

[55] Documents LEG 80/10/3 and LEG 80/11, paras. 140-141.

[56] Document LEG 80/3, annex 1.

[57] See report of the Legal Committee, LEG 80/11, paras. 14-57.

[58] Submission by ICFTU, IMO/ILO/WGLCCS 1/6/1.

[59] IMO/ILO/WGLCCS 1/6.

[60] An examination of the relevant instruments was provided by ILO in document IMO/ILO/WGLCCS 1/7.

[61] Report of the Ad Hoc Expert Working Group, document IMO/ILO/WGLCCS 1/11, paras. 6.51-11.6 and annexes 5 and 6.

[62] For the text of the Protocol, see report of the fifth meeting, document UNEP/CHW.5/29, annex III, at http://www.unep.ch/basel/COP5/cop5reportc.pdf.

[63] According to the definition, damage covers: life or personal injury; loss of or damage to property; loss of income directly deriving from an economic interest in any use of the environment; cost of measures of reinstatement of the impaired environment; and cost of preventive measures.

[64] See report of the fifth meeting, document UNEP/CHW.5/29, annex I.

[65] Excerpted from the contribution of UNESCO/IOC.

[66] The document will be posted on the web site of the Biodiversity Convention secretariat at www.biodiv.org/cop5/docs.html.

[67] Report of the 45th session of the Subcommittee on Safety of Navigation, NAV 45/14, para. 3.25.

[68] Ibid., para. 3.21, and annex 3.

[69] *The New York Times*, 18 January 2000, p. F1, F4.

[70] Ibid., 23 November 1999, p. F3.

[71] *Official Records of the Third United Nations Conference on the Law of the Sea*, vol. XIV (United Nations publication, Sales No. E.82.V.2), Plenary, 134th meeting, para. 43, and Third Committee, 46th meeting, paras. 4 and 5.

[72] Excerpted from the contribution of IHO.

[73] Terry Knott, "Technology offshore: shifting to the seabed", *Petroleum Review*, vol. 54, No. 637, February 2000, p. 18.

[74] *BBC International Reporting Service*, 27 January 2000.

[75] *The Earth Times*, Year 8, No. 12, December 1-31, 1999, p. 28.

[76] Excerpted from the contribution of ICJ.

[77] The text of the award is deposited with the Secretary-General of the United Nations in accordance with article 16(2) of the Arbitration Agreement of 3 October 1996 between Eritrea and Yemen.

[78] For details of the Subcommittee's discussion, see ACC/2000/8.